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ORIGINAL ARTICLES.

RECENT EXPERIENCES WITH ERYTHROMELALGIA.*

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AT the meeting of the Medical Society of the State of New York held in 1897, I reported a case of erythromelalgia associated with Raynaud's disease in which there was a prolonged period of agonizing pain in the fingers of the right hand, burning, prickling sensations, the characteristic rose-colored fingers, while the whole hand was covered at the time of acutest suffering with thousands of sweat-drops. The temperature of the hand was always perceptibly increased and the pain was aggravated when the hand hung down; hence it was usually held up firmly by the patient to obtain relief. Finally the terminal phalanx of the thumb became cold, blue and shrivelled. There was a V-shaped line of demarcation, and, after a process of dry gangrene, it separated entirely, leaving the articular surface of the bone clear and smooth. The ultimate gangrene in this case was considered to be the result of secondary vascular change, a conclusion which is strengthened by the overwhelming evidence of changes in the arteries, particularly in the intima, consequent upon long-continued distention or vasomotor paralysis.

The position of the writer was strengthened by the facts which Thoma[10] had brought to our notice in *Virchow's Archiv*, which proved that compensatory changes take place in the arteries which have remained distended for a considerable time, and which in truth are too large for the blood which courses through them. In the case reported it was held that this compensatory effort finally caused complete occlusion in some of the smaller arteries supplying the terminal phalanx of the thumb, and death of the part resulted. The patient suffered but little pain, comparatively speaking, after this event. The hand always remained hot, and when hanging down became rose-colored and uncomfortable. She died of acute tuberculosis in eighteen months after the loss of the thumb phalanx.

All of the symptoms preceding gangrene were positive of the symptom-complex known as erythromelalgia and corresponded exactly with those given by Weir Mitchell and Lannois, whose differential methods were used to make positive the diagnosis. The possibility of the association of gangrene, Raynaud's disease or other necrobiotic processes has been denied by some writers. Among these is Weir Mitchell, to whom we are indebted for the first full consideration of the symptoms to which he finally gave the name of erythromelalgia.

In connection with the history of erythromelalgia, it may be interesting to note that Graves in 1843 described a peculiar condition of the extremities associated with symptoms much like those mentioned by Mitchell in 1872 and 1878, in which he suggested that the nerves and arteries of a part independent of the heart could affect local circulation sufficient to give rise to local symptoms of a peculiar and unique character. It has seemed that the symptoms of erythromelalgia are occasionally associated with processes of a destructive character, either through pathological changes in the blood-vessels, the peripheral nerves or from other causes, which remain purely speculative.

Three cases have been seen since writing my original paper on this subject; two of these cases will be considered carefully, and to these I wish to call your attention at this time. The third case was seen but once and could not be followed. The history, however, justified the conclusion that the patient, a man aged fifty years, without specific history, was suffering from an alternation of erythromelalgia and the first stage of Raynaud's disease. The red neuralgia persisted during several days, when suddenly the marble fingers of Raynaud's disease followed. These conditions had alternated with each other for some time. In this case there was no deep loss of tissue, but at the tips of the fingers there were several cup-shaped depressions showing the loss of epithelium in small plaques.

Case I.—William McM. was seen in consultation with Dr. Jacobson on July 1, 1897. He was sixty-four years of age, married, had been a contractor, vendor and finally a farmer. Thirty-six years ago he contracted syphilis. His subsequent history considerably abbreviated is as follows: In the summer of 1893 he first complained of pain, burning in character, associated with great heat and a prickling sensation in his right foot and most severe in his right second toe. During 1893 and until January, 1894, this pain recurred in paroxysms. It was always of the same char-

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later and always associated with great heat in the foot and with considerable redness. Early in 1894 the ball of the great toe of the right foot became exquisitely tender and painful. After this date it was noticed that at the time of greatest suffering the foot became hot, rose-colored, and was covered with thousands of sweat-drops, while the veins were always abnormally prominent and the arteries beat violently. It soon became apparent that the patient was worse when the foot was suspended. In 1894 his weight was 220 pounds. Early in 1897 he dropped to 150 pounds.

In June, 1894, he was thrown from his wagon and he supposed (until an examination proved to the contrary) that he had broken his leg. No bruises or scratches on his leg or any other part of his body were found. After this accident the pain was more severe, with all of its former accompaniments, extending to the neighboring toes and radiating upward beyond the ankle. Soon the left foot was involved in a similar process of red neuralgia with hyperidrosis. Both feet had become exquisitely tender and hypersensitive. The patient rested on his back much of the time. Almost from the beginning of the second year of his suffering and until his death there was a fine rhythmic tremor in the muscles of both legs, increasing as the disease progressed, and always increased during the acute exacerbations of pain and while the feet were dependent. With the progression of the disease there was more or less atrophy of the muscles of both legs, more advanced in the right than in the left leg.

Before the patient consulted Dr. Jacobson, he had been unsuccessfully treated by a number of physicians, and numerous diagnoses had been made. During the early days of Dr. Jacobson's treatment cauterization along the spine with large doses of iodide gave transitory relief; later, however, these remedies failed to control the pain and other symptoms. The patient had always been constipated and suffered considerably from gastric and intestinal indigestion.

About January 16, 1897, almost six months before I saw him, the middle toe of the right foot became gangrenous. The process remained dry and the surrounding tissue became dusky, while the appearances of hyperemia continued above these parts whenever the leg was held down. The gangrene advanced upward with increasing atrophy of the muscles of the right foot and leg until, finally, the fourth toe became dusky, and by October 21st much of the tissue of the right foot was gangrenous. All of the toes with the exception of the little one were involved. There was no pulse perceptible in the right dorsal pedis nor in the posterior tibial arteries. The left foot remained erythromelalgic without gangrene. Careful examination of the patient failed to give evidences of spinal or other central disease. The eyes as well as all the superficial and deep reflexes were normal. Physical examination on July 1, 1897, gave ample evidence of far-reaching arteriosclerosis. This degenerative process included the aorta, and wherever the arteries were palpable there was no difficulty in detecting the characteristic unevenness and their abnormal resistance. There was slight hypertrophy of the left ventricle. Urinary examination proved negative.

Long before I saw the patient his suffering became so acute as to keep him in bed with his head low and his feet in the air on a mountain of pillows. It was impossible to use the esthesiometer. The slightest pressure or draft intensified his suffering, and large doses of opiates were successful, with the posture treatment after July, 1897, in relieving only slightly the acute and persistent pain. With these symptoms the patient died of exhaustion January 5, 1898.

This is the history of a case of erythromelalgia covering a period of five years, with ultimate gangrene of the right foot, and with a persistence of rose neuralgia in the left with an underlying specific history and far-reaching arterial disease.

Case II.—On January 8, 1897, through the courtesy of Dr. Jacobson, Miss F., aged thirty-nine years, a tailoress, was referred to me. Her mother was living at that time, but has since died at the age of sixty years of cancer of the stomach. Her father died of diphtheria when thirty-three years old. She has two sisters who are living and are healthy. There were no evidences of neuropathic tendency or specific taint. She worked on heavy clothing, probably in an unfavorable environment. Her suffering commenced over sixteen years before I first saw her. During all these years she had the characteristic symptoms included in Weir Mitchell's original description of red neuralgia or erythromelalgia.

Her pain commenced in the palmar surface of the terminal phalanx of her left index finger. In addition to a severe paroxysmal neuralgic pain in this finger she complained of continuous discomfort; and early in her history it became evident that when the finger hung down it became rose-colored; paroxysms of intense suffering followed, with a burning, prickling sensation; there was throbbing and swelling, while the entire hand, more particularly the index finger, felt abnormally hot and soon became covered with innumerable sweat-drops. She noticed too that the pain was worse during menstruation, and that as time wore on the paroxysms became more frequent, the veins of the fingers and hand during the exacerbation of pain increased in size, while the arteries beat with increased force. Soon the index finger became hypersensitive and hyperalgesic, and there was a

fine rhythmic tremor involving the entire hand, more violent in the index finger.

During all these years and until the final radical treatment this tremor persisted. To prevent the extreme agony which finally became unbearable, this unfortunate girl worried through almost twenty years, holding her hand during her waking hours that it might not be brought in contact with any object, and that she might be spared the added suffering which was sure to follow when her hand was suspended. Her entire left arm remained unused and there was more or less atrophy, including the interossei. The smaller joints were stiffened. At times there were clonic spasms of the flexor muscles of the fore-arm. The greatest sensitiveness was found about the nail of the index finger. Cutting the nail increased the pain. The slightest touch with the points of the esthesiometer provoked pain and perceptibly increased the tremor. Heat aggravated the pain, while cold during the first few years seemed to give relief. Later, nothing ameliorated the acute suffering save the holding of the hand quiet in an upright position.

After this erythromelalgic condition had persisted for about ten years, there were two superficial ulcerations involving the skin on the palmar surface of the first and second phalanges of the index finger. These finally healed, leaving slight depressions covered with normal skin. The necrobiotic process was without influence on her pain; the finger continuing red and congested.

When she came to me there was no time when the index finger was without erythema or tremor, or when the hand was not abnormally hot and sweat-covered. About five years ago a small circumscribed gangrenous patch involving the tip of the painful finger appeared, which left a slight depression to be finally covered with normal skin. On this depression there was a deposit of horny epithelium, which renewed itself rapidly and broke off in plaques. A skiagram showed no changes in the bones of the hand. Hyperesthesia both of depth and surface was augmented.

Desperate, willing to make any sacrifice which might lead to relief, she consulted me in August, 1900. The symptoms were not materially changed from those already described. The esthesiometer could no longer be used because of increasing sensitiveness. The knee-jerks were noticeable in both legs; no ankle clonus present in either foot. The muscles of the arm and forearm gave normal response to electricity. All degrees of heat or warmth applied to the troublesome finger were overappreciated; there were no eye symptoms; the mental condition had always been normal; there were no symptoms referable to the lower extremities. The localization of the greatest pain in the index finger, its persistence during many years without evidences of brain, spinal or other peripheral involvement, the futility of medical treatment, seemed to justify surgical interference. Amputation of the index finger below the erythematous area was advised. Dr. Jacobson concurring, the patient readily consented. It was thought wise to sacrifice part of the metatarsal bone, which, as the result proved, made the ultimate deformity less prominent.

The improvement in the condition of the hand, and the return of the patient to a life of usefulness after a long period of suffering justified the sacrifice of the finger. There has been no pain in the hand during the past eight weeks, the patient has gained in weight, the tremor has disappeared except when fatigued, and to all appearances *the offending factor was removed with the finger.*

Dr. Steensland, to whom the finger was sent for examination, reported as follows on the microscopic examination of the specimen: "Tissues were hardened in Zenker's fluid. Sections were cut from the skin in the region of the second phalanx and at the tip of the finger, including the horn-like outgrowth; from the vessels and nerves at the base of the finger; and from the muscular tissue of the corpus. Sections were stained in hematoxylin and eosin. Sections of the nerves were also stained by Van Gieson's method for the central nervous system." "There is occasional slight thickening of the intima of both the large and the small arteries. About the small arteries are occasional foci of infiltration with lymphoid cells. Veins are apparently normal. The horn-like outgrowth occupies a slight depression in the general surface and consists of a thickening of the horny layer of the epidermis. Careful examination of the nerves, Pacinian corpuscles, sweat-glands, hair-follicles, and muscles shows nothing apparently abnormal."

A study of the cases reported casts no doubt upon the diagnosis of erythromelalgia. In speaking of the diagnosis of erythromelalgia, Weir Mitchell makes the following statement after giving the histories of two cases, one, a case of erythromelalgia, the second, one of Raynaud's disease: "Surely, no two more entirely separate groups of symptoms could be found; this cold, white hand, with its pale fingers, free from pain of any moment and more or less anesthetic, and now presently livid; this hot, deep-red foot, so painful that its torment brings out the sweat on the sufferer's brow."

In the cases here reported the destructive processes were not preceded by the corpse fingers or toes, but with opposite conditions, long-continued, and always associated with the circulatory changes which Weir Mitchell has aptly described as a "true vascular storm"; thus agreeing in every particular

with the original and subsequent description by Mitchell with, however, the addition of the gangrene and superficial loss of tissue.

The bibliography and references appended prove that our experience with erythromelalgia is not as yet a large one. In all probability, if all the reported cases were carefully scrutinized, we should not find their number much above 50. Among these there are, however, including my original case and those of this paper, ten or eleven which bear directly upon the association of the processes which are held possible in this paper. Morell-Lavalle[41] reported a case in which the symptoms of erythromelalgia alternated with those of partial local syncope. Mills[88] had the case of a woman aged twenty-three years, who after two years of persistent erythema of the extremities developed symptoms resembling the milder Raynaud phenomena. Dehio's[13] case has been frequently quoted. A small portion of the ulnar nerve above the wrist and an equally small piece of the ulnar artery were resected. In five months the tip of the little finger of the left hand became black and a small piece of bone with pus and blood escaped. In this case microscopic examination showed marked changes in the intima, which materially narrowed the lumen of the vessel. *There were no changes in the nerve.* Kahane[80] reports a case in which, as in the second case reported in this paper, there were superficial ulcerations, depraved nutrition of the nails and rhagades.

Sachs and Wiener[88] report the case of a man in middle life, without any evidence of other nervous or arterial disease, in which erythromelalgia developed in the left foot, and in which there was finally a dry gangrene of the second toe with a threatening gangrene of all the other toes. Amputation was followed by a satisfactory recovery. Sachs[88] says that he has met two cases of erythromelalgia associated with gangrene of the toes, and adds: "We must therefore modify Weir Mitchell's account and claim that in extreme instances of this disease gangrene may occur." In Wiener's[88] report of the microscopic examination, he says, "There is a marked arteritis affecting all the coats, but more particularly the intima." There were a few degenerated nerve-fibers, but the nerve-changes "were relatively slight."

Rolleston[88] reports the case of a man, twenty-nine years of age, with symptoms which have "affinities" with both Raynaud's disease and erythromelalgia. The symptoms of Raynaud's disease were atypical. There was redness of the hypersensitive skin, made worse by heat and relieved by cold. Johannssen's[88] case reported by Oppenheim shows the association of erythromelalgia and Raynaud's disease, while Potain[87] has reported a case in which, as in the first case reported in this paper, there was gangrene on one side and erythromelalgia on the other.

In the first case here reported the underlying pathogenic factor was certainly the specific and sclerosed arteries. However slight the changes found on the miscropical examination of the arteries in the second case, the subsequent cure and the absence of changes in the nerves must prove that these were sufficient to cause the symptoms. It is an interesting and noteworthy fact that, in most of the cases in which microscopic examinations have been made, the greater changes have been found in the arteries, while the nerves have been only slightly or not at all changed.

The results of Sternberg's[85] experiences collected in his recent article on "Endarteritis und Endophlebitis Obliterans und ihr Verhältniss zur Spontane-Gangraen" are corroborative of the great rôle which the arteries play in these cases. His paper is a convincing contribution to the subject, for it is founded on the careful pathological study of six cases; five of these were young subjects in whom spontaneous gangrene resulted, while in some of the cases the erythromelalgic symptoms were an accompaniment; in all, however, the microscopical examination revealed more or less endarteritis obliterans *without change in the accompanying nerves or terminal plates.* The pains as a rule were worse at night and were aggravated by heat. The greatest changes were found in the intima.

Sternberg[85] concludes as the result of his investigation that the "cause of spontaneous gangrene is a fundamental endarteritis obliterans, which is provoked by a variety of noxious changes upon a weak and tardy local circulation with ultimate hypertrophy of the muscularis and an active tissue-overgrowth of the intima." Thoma's[70] original experiences, in which secondary arterial changes were found to take place and which have already been mentioned in connection with the case reported in a former paper, are corroborated.

The failure to find microscopic changes in the nerve-structures of a finger in which pain and other sensory symptoms have been in the ascendency during a period of twenty years is indeed surprising, but it is not at variance with the experiences already mentioned. Indeed Sachs[88] ends his paper with the statement that "surely erythromelalgia is as much an arterial as a nerve disease."

How do we account for the pain in these cases? In 1893 Nothnagel[89] and in 1894 Laache,[81] in considering pains of so-called vascular origin, called attention to the fact that the adventitia of arteries contained Vater-Pacinian bodies; and to this sensory terminal apparatus they pointed as the origin of the pain in these cases. Schlessinger's[86] theory is not tenable in our cases. He says that in these scases the *vaso nervorum* are de-

generated and finally cause the pain. This may occur, but in the cases reported and in those examined by Sternberg[65] there was no such process. It is not uncommon for circulatory disturbances to cause pain by irritation of the sensory end apparatus in the skin. Erb[77], in his article on "Intermittent Claudication and Other Nervous Disturbances Following Vascular Changes," agrees that endarteritis is the cause of the pain.

The differential diagnosis of erythromelalgia and acroparesthesia must be considered. The latter condition first brought to our notice by Nothnagel[82] in 1867, later by Schultze[84] in 1890, resembles erythromelalgia only because of the presence in both of paresthesia and hyperesthesia. In no other particulars are these conditions similar. Acroparesthesia is associated with numbness and falling asleep of the fingers and formication. There are but few objective sensory disturbances; oftener there are none. There are no vascular symptoms; there is considerable motor weakness; if there is change in the color of the fingers, they are pale, not red; the hands are abnormally cold; in some cases the temperature is reduced from ½° to 2° C. Friction, walking and movement of the parts reduce the discomfort, while in erythromelalgia these aggravate the torture. There is greater intermission in the symptoms in acroparesthesia, while in erythromelalgia they finally become continuous; in erythromelalgia the reflexes are exaggerated, while in acroparesthesia they are normal. The vascular storm is absent in the latter; decidedly in evidence in the former. Of 162 cases of acroparesthesia 150 were women; only 12 were men. The majority of cases of erythromelalgia are found in men. Acroparesthesia affects anemic, cachectic and overworked adults; in middle life and women at the climacteric, particularly those who work in cold water. In erythromelalgia there are, besides the predilection of the disease to attack the lower extremities, complications referable to the digestive system with far-reaching central, spinal or peripheral changes in many cases.

At the present time erythromelalgia cannot be dignified as a disease *per se*. Scanning the literature which has accumulated, we are surprised to find the great variety of diseases which claim erythromelalgia as an attendant.

In addition to the cases to which the writer has referred, the following are noteworthy: Schenck's[80] case with ascending degeneration of the posterior columns of the cord; Woodnut's[75] case was associated with myelitis; Collier[12] reports 10 cases associated with various spinal, system and indiscriminate lesions; Auerbach[3] reports two cases, in one of which a postmortem examination revealed degenerative changes in the posterior nerve-roots of the lumbar and sacral nerves without degeneration in the cord substance, while the blood-vessels were found normal. This is the only postmortem of a case of erythromelalgia on record. Nieder[44] reports a case of erythromelalgia with eye symptoms prominent, choked disc with vascular dilatation, Eulenberg[16], one case of brain tumor with hemorrhagic retinitis, and consequent changed visual field; Hoffman[79] mentions an interesting case of acromegaly associated with erythromelalgia, in which the patient was twenty-three years of age. She had had erythromelalgia since her sixth year, when finally the characteristic changes in the hands and feet of acromegaly followed; Henoch's[26] case was one of erythromelalgia following hemiplegia and hemihyperidrosis, death finally resulting from angina pectoris[78]; and Levy[31] reports a case resting on a hysterical basis, cured by hypnosis, in which erythromelalgia was associated with Raynaud's disease.

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THE TREATMENT OF THE HEART IN TYPHOID FEVER AND OTHER INFECTIOUS DISEASES.

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THE maintenance of cardiac vigor is always a source of anxiety in the treatment of typhoid fever, pneumonia and other infectious diseases. Since the inauguration of systematic hydrotherapy in typhoid fever, no experienced physician can gainsay the life-saving functions of this therapeutic method. While the antipyretic effect of the cold bath is a recognized factor in treatment, it must be regarded as possessing only a secondary influence. The chief action of the bath is on the circulatory system. By maintaining the vigor of the latter apparatus, we succeed in providing for the necessary resistance to the typhotoxins. Despite the salutary effects of the cold bath, we are constrained to recognize the following disadvantages: (1) The apparent brutality of the method; (2) the discomfort and suffering attending its employment; (3) the difficulty often encountered in its employment in private practice; (4) the hardship and the necessary assistance in executing the method; (5) the occasional collapse symptoms following the method.

There is no therapeutic method which is universal in its application and individualization is as imperative in typhoid fever as it is in other diseases. Whenever an error is perpetrated in the hydrotherapeutic treatment of typhoid fever, it is most emphatically in the direction of misinterpreting the effects to be attained by the use of the cold bath; and such an error is always in evidence when the thermometric curve and not the condition of the heart is taken into consideration. No matter how decided the antipyretic action of the bath, if cardiac vigor is compromised or fails to be improved, the end result of hydrotherapy is defeated. The cold bath may temporarily overcome the lethargy or even inhibit the delirium and nervous symptoms yet withal, such results are achieved through the agency of shock and not through the legitimate channel of stimulation of the nerve-centers presiding over important functions. I have frequently witnessed the employment of cold baths in the treatment of typhoid fever by practitioners with dogged pertinacity despite alarming heart-collapse symptoms, the finality of the procedure taking only into account a reduction in temperature; and, when the latter condition had been achieved, the cold bath was regarded as effective.

The following theories have thus far been advanced in explaining the action of the cold bath in typhoid fever: (1) It possesses a powerful stimulating action on the circulatory apparatus and nervous system. (2) It exerts an antipyretic action. (3) It stimulates the nerve-centers presiding over the functions of respiration, circulation, digestion, nutrition and excretion. (4) The flux and reflux of blood between the periphery and viscera are facilitated. (5) Leucocytosis is produced.

Until we are willing to dismiss antipyresis as the great desideratum in the treatment of typhoid fever, we cannot hope to achieve any better results in this disease than are at present obtained. A departure from the conventional method of treatment, however, appears easier owing to the tendency in recent years to discredit the advantages accruing from antipyresis, hydro- and pharmacotherapy. In attempting to solve the rationale of hydrotherapy, the theory which most cogently appeals to reason is that which presumes that the action of the cold bath is secured

by stimulation of the peripheral cutaneous nerves. If the latter theory is correct it needs corroboration and the following observations are adduced in its support. I have endeavored to show in several contributions[1] that we are able by cutaneous irritation to powerfully influence the pulmonic and cardiac vigor by inducing what I have called respectively the lung and heart reflexes. The nature of the cutaneous stimulant is of but little moment, it may be mechanical, chemical or electrical, the result being always the same, namely, dilatation of the lungs and contraction of the myocardium. The physiological results of lung dilatation (*lung reflex*) are the conveyance of more oxygen to the blood and consequently, a better nutrition of the tissues. Myocardial contraction (*heart reflex*) is marked by reduction of the pulse-rate, together with an increase in volume and force. One can be easily convinced of the influence which cutaneous irritation exerts on the action of the heart by auscultating the mitral sounds in a typhoid-fever patient, especially during the stage of convalescence. The slightest pressure of the stethoscope in the mitral area will cause the heart sounds to become feeble or even inaudible. The elicitation of such results is, however, not uniform. There are limited areas which are not responsive to the test while others are. For convenience of description I will refer to the latter as cutaneous cardio-inhibitory areas.

To relinquish hydrotherapy as conventionally employed, the surrogate suggested must possess certain advantages and I believe that by the use of balneotherapeutics after the Schott method, such advantages can be attained. I know of no means better adapted for maintaining the vigor of the heart in typhoid fever, pneumonia and other infectious diseases, than the use of the carbonated baths. The reduction in temperature after the carbonated baths is relatively slight. Such reduction is evoked by dilatation of the cutaneous vessels, thus increasing heat-radiation. If we are disposed to disregard the effects of the carbonated baths on the temperature, we will observe decided advantages in favor of the baths. If, however, we regard temperature reduction as a necessity, then we may alternate the carbonated with the cold baths or we may even incorporate the ingredients necessary for generating the carbonic acid, in the cold bath. I have frequently observed that, when heart-collapse signs follow the cold bath, they may be prevented most effectually by the means just suggested.

Recognizing, as I do, that the salutary effects of hydrotherapy are provoked essentially by cutaneous stimulation I have had recourse in the treatment of a few cases, to a procedure which for convenience is called a *friction bath.* The method is succinctly as follows: The patient is first rubbed or sponged with alcohol and this is followed by vigorous cutaneous friction until the skin glows. The results of this method are at once evident in the circulatory apparatus and nervous system. The following is a typic record taken by the nurse in a typhoid-fever patient on the thirty-sixth day of his disease. Pulse records were made at five-minute intervals following the friction bath.

TIME.	PULSE.	TEMP.	RESP.	REMARKS.
1:30 P.M.	100	100.1	18	Pulse previously dicrotic and difficult to count; has lost dicrotism and is easily counted.
	100			
Friction bath.	96	100.2		
	90			
	90		18	
6:00 P.M.	120	102.8	24	
	118			Slightly delirious.
Friction bath.	116			
	100	102.4	18	
7:00 P.M.	90	102.8	18	
	88			Quiet and restful.
Friction bath.	86			
	84	102.7	18	

The friction rub was ordered whenever the temperature was above 102.6° F. or when the heart showed evidence of enfeeblement. The latter sign was elicited by reference to the intensity of the heart sounds by means of a stethoscopic attachment which I have called the stethophonometer.[1]

In nearly all the cases where the friction bath was employed in lieu of the cold bath, the temperature reduction was slight, but the stimulating effects on the heart and nervous system were pronounced. I wish parenthetically to show how suggestion even enters into the prosaic pursuit of nursing. I instructed an intelligent nurse to keep a record of the pulse in a case of typhoid fever, and the following was the result: Before friction bath, pulse counted at five-minute intervals, 92, 90, 96, 100. After friction bath, 96, 98, 104, 108.

On expressing surprise at the record, which was contrary to my expectations, she replied, "I supposed that is just what the friction bath would do. On the following day she gave me the following record: Before bath, 94, 92, 96, 98. After bath, 80, 78, 72, 68.

The latter record was also a disappointment and on the same day, I made her repeat the record with the same results. A control record, made by myself immediately after, demonstrated that the nurse had erred most grievously; her desire to please me as she supposed caused her to err to the extent of about 8 pulse-beats on an average per minute. I believe that the real benefits from the natural or artificial Nauheim baths are dependent on cutaneous stimulation by the billions of gas-bubbles contained in the carbonated baths.

Of late, I have employed with excellent results, not only in the treatment of typhoid fever and pneumonia, but in chronic diseases of the heart, a procedure which I have called the *siphon method.* It is suggested for its simplicity and efficiency. The patient is prepared in the usual manner for taking a sponge bath and beyond this no disturbance of the patient is necessary. Then a siphon bottle containing the carbonated liquid

[1] MEDICAL NEWS, Jan. 7, 1899.
Philadelphia Medical Journal, Jan., 1900.
New York Medical Journal, Jan. 13, 1900.

[1] Made for me by the Shoenberg Electrical Co., San Francisco.

is gradually discharged over the surface of the body, notably on the thoracic region. If one wishes to comply with the requirements of the Schott system, although stimulation is not so pronounced, the siphon bottle may before use be immersed in hot water until the requisite temperature is attained. Within a few minutes, one may note after the employment of the siphon method, a reduction of the pulse from 10-20 beats a minute which rate is maintained for a varying period of time. The pulse becomes likewise endowed with more strength and there is a feeling of exhilaration such as rarely obtains after the cold bath. Pulse-tracings taken in a convalescent typhoid patient, with an extremely weak heart, have demonstrated the favorable action of the siphon method.

A REPORT OF THREE CASES OF THORACIC ANEURISM TREATED BY SUBCUTANEOUS INJECTIONS OF GELATIN.*

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THE announcement by Lancereaux[1] in 1897 of his results in the use of subcutaneous injections of solutions of gelatin in the treatment of five cases of aneurism of the aorta has, very properly, excited wide interest and, also, no inconsiderable amount of discussion. The use of gelatin for this purpose was suggested to him by the observations of Dastre and Floresco[2] who found that gelatin when introduced into the blood produced a very marked heightening of its coagulative power.

It is not my purpose here to discuss generally the use of gelatin injections in aneurism. The whole subject has recently been carefully reviewed by Sorgo,[3] Ewart[4] and Futcher[5] of Baltimore. The last-named also records his results in nine cases of aneurism treated in the Johns Hopkins Hospital. My object is simply to relate my own experience with this therapeutic measure in three cases of thoracic aneurism which have come under my care during the past year at the Hudson Street Hospital. I must say, at the outset, that in none of the three cases was it possible to carry out the treatment sufficiently long to draw any definite conclusion of its value as a curative agent. The experience was sufficient, however, to demonstrate certain objections to the method and certain difficulties in the way of its administration.

Lancereaux's directions are that a solution of 4 or 5 grams of white gelatin be made in 200 c.c. of normal salt solution and that this be sterilized in a flask at 120° C. Separate samples of this are kept at 38° C. for several days and those specimens which become turbid or fail to solidify on cooling are discarded. Of this two or two-and-a-half per cent. solution 200 c.c. are injected into the subcutaneous tissue of the thigh. After injection the patient is kept absolutely quiet. The aneurism should not be palpated. The injections are to be repeated every six or eight days and should be continued until 15 or 20 have been given. Lancereaux thinks this method applicable chiefly to saccular aneurisms.

Huchard[6] believed the two-per-cent. solutions of gelatin to be rather dangerous, in that they tended to produce too rapid coagulation, and preferred to use a one-per-cent. solution. The same view was later taken by Lancereaux, who used the one-per-cent. solution in somewhat larger quantity (250 c.c.). In each of my own cases the initial injection consisted of a two-per-cent. solution, and the subsequent ones of a one-per-cent.

Lancereaux states that such injections cause no pain and produce neither local nor general reaction. These statements have not been entirely confirmed by most of the other investigators, nor do they correspond with my own experience.

Case I.—Aneurism of Descending Portion of Arch. Three Injections. No Improvement. Death from Rupture into Esophagus. Autopsy. An Italian laborer, aged fifty years, was admitted to hospital April 6, 1899. He denies syphilis and alcoholism, and has always had a laborious occupation. For two years he has been troubled with burning pain in the left side accompanied by a whirling, gurgling sensation. Describes pain as passing from precordium around left side to region of scapula. Of late has been obliged to sleep in sitting position because of dyspnea. On admission his temperature was 98° F., respiration, 28, pulse, 108.

Physical Examination.—Fairly nourished, muscular man. Face anxious. Respiration moderately rapid. Cutaneous veins over left side of chest and left arm and shoulder prominent and tortuous. Over back of chest between angle of left scapula and vertebral column is a slightly projecting, rounded pulsating tumor. Pulsating area measures 6 cm. in diameter. Near the center of this area is a projecting spot 2 cm. in diameter.

Palpation.—Apex beat in fifth space, 10 cm. from median line and rather feeble. No other pulsation anteriorly. Behind, pulsation over area described. Most marked over the prominent center. Gentle palpation reveals erosion of ribs corresponding to this protruding center. No tracheal tugging. Radial pulses synchronous and of equal size. Arteries thickened and tortuous.

Percussion.—Dulness everywhere behind sternum and to a short distance on either side of the manubrium sterni. Below this dulness blends with area of cardiac dulness. Behind, on left side, well marked dulness from third dorsal spine to 1 cm. below angle of scapula.

Auscultation.—Over upper left chest inspiratory murmur almost lost; expiration of soft bronchial character. Behind, over left chest, as far down as dulness extends, absent breathing

* Read before the Section on Medicine of the New York Academy of Medicine, April 24, 1900.

and distant voice. Heart sounds as follows: At apex first sound muffled and prolonged; soft blowing systolic murmur over third left space. Urine normal.

There is profuse expectoration of greenish, purulent blood-stained sputa. For ten days after admission there was slight gradual improvement in cough and expectoration. April 21st all other treatment stopped. Injection of 185 cm. of two-per-cent. solution into left thigh.

On April 26th and May 1st, injections of one-per-cent. solution were given. These were all followed by slight local discomfort and by some temperature. As a result of these injections no change either in physical signs or in subjective symptoms, could be recognized. Four days after third injection patient had a violent attack of coughing, followed by vomiting of a large amount of bright blood, collapse and death.

Abstract of Autopsy.—Heart very small. Muscle light colored and rather soft. Valves competent. Transverse portion of arch of aorta shows moderate cylindrical dilatation. At beginning of descending portion the artery regains its normal caliber. Immediately beyond this a large saccular aneurism, 15 cm. in diameter, is given off posteriorly. This communicates with the aorta through a circular opening 3 cm. in diameter. The aneurism has eroded the bodies of the fourth, fifth, and sixth dorsal vertebræ, and has completely eroded the fourth, fifth, sixth, and seventh ribs near the angles. It communicates with the esophagus by an oval opening, 4 cm. long. The wall of the sac is very irregular in thickness, in places being made up of old laminated clot, 3 cm. thick, and in other places being free from clot. There is no evidence of recent clot-formation. Left bronchus is much compressed at its origin. A great part of lower lobe of left lung shows a condition of consolidation apparently of long standing. Stomach enlarged and abnormally low in position. It is filled with clotted and fluid blood. Remaining viscera show only unimportant changes.

Case II.—Aneurism of Transverse and Descending Portions of Arch and of Innominate Artery. Seven Injections. Severe Local Pain. Slight Improvement. A housemaid, unmarried and forty years old, was admitted to hospital May 18, 1899. Denies history or symptoms of syphilis. Fairly marked alcoholic habit for several years. Acute articular rheumatism six years ago. Dyspnea on exertion for past two or three years. Six months ago she began to have intermittent pain in right supraclavicular space and noticed some swelling there. One week later pain became fairly constant and has since persisted. Some increase in dyspnea. Also irritation of throat with dry cough. On admission the temperature was 98° F., respiration, 26, pulse, 92. Urine normal.

Physical Examination.—Fairly nourished woman of good color. Slight dyspnea. Eyes prominent. Right pupil wider than left. Reaction normal. Prominence of superficial veins of both sides of neck and both shoulders. In right supraclavicular space is seen a small pulsating swelling. With each pulsation the sternal end of right clavicle moves slightly.

Palpation.—Swelling the size of a small walnut just above right clavicle and extending down behind bone. Pulsation systolic in tissue. Systolic pulsation also felt immediately to right of first bone of sternum. Apex beat in fifth space 12 cm. from median line and of heaving character. Distinct tracheal tugging. Pulses equal. Arteries show no marked changes. Behind, slight systolic pulsation inside of left scapula between spine and lower angle.

Percussion.—Precordial dulness reaches to right border of sternum and extends upward behind manubrium sterni to suprasternal notch. In first and second right intercostal spaces the dulness extends one-third the length of the clavicle. It also extends slightly to left of the manubrium. Left border of cardiac dulness extends 1 cm. to left of nipple line. Behind, moderate dulness on left side from spine to angle of scapula.

Auscultation.—Short double murmur at apex which grows louder toward base of heart. Harsh systolic murmur over tumor above clavicle. Behind, faint double murmur heard over area of dulness on left side.

After patient had been kept in bed for six days gelatin injections were begun. Between May 24th and July 8th seven injections were given, the first containing two per cent. of gelatin, the subsequent ones one per cent.

The first injection was followed by slight local pain and by a slight rise of temperature. The second, by severe pain, some redness and tenderness and a moderate temperature (102.6° F.). The remaining five injections were each followed by such severe pain as to require the use of morphine to make it bearable. The pain began very soon after the introduction of the fluid and was often intense for eight or ten hours. The area about the point of injection was swollen and red, but there was no distinct induration nor was there ever suppuration. Some febrile reaction was always noticed, but no chills occurred. The pain was present whether the injections were made in the thigh or in the abdominal wall. The suffering of the patient was finally such that we did not feel justified in continuing the treatment. After the second injection the slight pulsation felt posteriorly disappeared.

On her discharge some days after the last injection the patient's condition, as compared with that upon admission, was as follows: The pain in right side of neck was less constant and less severe, but was felt over a somewhat larger area. The cough and irritation of the throat had disappeared. The slight pulsation posteriorly had disappeared, but anteriorly it seemed to be rather more distinct. The swelling in neck had slightly increased in size, but was less tender. Patient

was seen again five months later, at which time no appreciable change in the signs could be recognized.

Case III.—Aneurism of Transverse Portion of Arch. Three Injections. Severe Local Pain. No Improvement. Bartender, forty-five years old. Admitted to hospital June 19, 1899. Denies syphilis. Alcoholic habit excessive up to three years ago; since then moderate. Always well up to nine years ago. Then suddenly developed high-pitched, husky voice which has since persisted. For past two months gradually increasing dyspnea. This morning was awakened by a violent attack of spasmatic dyspnea, which was present on admission. No pain at any time. Temperature, 101° F., respiration, 38, pulse, 104.

Physical Examination.—Patient poorly nourished and anemic. Marked dyspnea. Pupils unequal, left being moderately dilated and sluggish in its reaction to light. Right pupil small and with normal reaction. Complete paralysis of left vocal cord. Veins over upper left chest and left side of neck distinctly dilated. Pulsation and slight tumefaction in suprasternal notch and left supraclavicular space. Slight pulsation in first left intercostal space. Apex beat in sixth space 10 cm. from median line. Action regular and forcible. Pulses synchronous, equal in size. Arteries somewhat thickened and tortuous. Distinct tracheal tugging. Well-marked dulness behind first bone of sternum and in first and second spaces for a distance of 3 cm. to left. Below this the dulness merges with that of precordium. A loud systolic murmur is heard over base of heart and in vessels of neck. Also a blowing diastolic murmur over pulsating area and less distinctly over base of heart. Aneurism gives no physical signs posteriorly. The severe dyspnea persisted for some hours, but gradually subsided and thereafter was never more than slight.

Four days after admission patient was given his first injection of gelatin in the right thigh. This was followed by moderate pain and slight temperature. Ten days later a second injection was given, followed by quite severe pain. After an interval of eight days a third injection was made into the abdominal wall. This was followed by such severe pain as to require morphine. The patient was so loth to submit to further injections after this experience that the treatment was discontinued. During the period of treatment there was a gradual, but distinct increase in the size of the pulsating area and in some of the subjective symptoms.

In all these cases the greatest care was exercised in the preparation of the gelatin solutions. The gelatin was carefully selected; the solutions were filtered and then tested as to their reaction lest they should contain some acid. They always, however, gave a neutral reaction. The sterilization and the introduction of the fluid was also done with the greatest care. The injections were made by means of a large aspirating syringe and the fluid was introduced as nearly as possible at a temperature of 100° F.

To recapitulate briefly: Of the three cases, two received three injections and one seven. In two cases the injections had to be discontinued because of the severe local pain. In the third the pain was only slight. In one case, that receiving seven injections, a very slight improvement could be detected. In one case a slight increase in symptoms was noted, while the third case died of rupture of the aneurism while under treatment and the autopsy showed no evidence of recent thrombus-formation, although the condition, that of a large sac with a small communication with the aorta, was an especially favorable one for clotting. Aside from the pain and local irritation no untoward symptoms were observed in any of the cases as a result of the injections.

I am not ready to conclude from these cases that the method has no therapeutic value since in none of the cases was it possible to carry out the treatment fully. Lancereaux believed, however, that he could see very distinct improvement even after a single injection. Certainly no such satisfactory result was apparent in any of the present cases. Futcher gives his results in nine cases as follows: While no case was cured there was a considerable diminution in the size of the aneurism in one case and in several others an appreciable reduction in the subjective symptoms referable to pressure. He believes the treatment to have some merit. Futcher also found that the injections were frequently very painful and were followed by local reaction, fever and even chills.

It must be remembered that the administration of twenty injections would consume approximately five months of time and that during this period the patient must be kept absolutely quiet in bed. Rest in bed for such a length of time would, of itself, in many cases produce a distinct amelioration of the subjective symptoms and even some improvement in the physical signs.

My experience in these cases has at least convinced me that, whatever the curvative value of the treatment, its usefulness is seriously impaired by the severe pain which frequently follows the injections.

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OBSERVATIONS UPON THE AMŒBÆ COLI AND THEIR STAINING REACTIONS.[1]

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BECAUSE of their diagnostic importance and the fact that they are often mistaken for other structures occurring in the intestinal tract, a brief description of the amœbæ of dysentery

[1] Published with the permission of the Surgeon-General of the United States Army.

may be of interest. It is safe to say that among the parasites causing disease in man there is not one which more often has been blamed unjustly for disease conditions than has the *Amœba coli*. This is because it has so often been said to be present in the feces when in reality it was not, other things slightly resembling it having been mistaken for it. Large intestinal epithelial cells, leucocytes, collections of anemic blood-corpuscles, monads and the *Cercomonas intestinalis* have all been shown me as the veritable amœba, and that by men otherwise well informed in such matters. To know the amœba one has to have seen it, and it is one of the most difficult of parasites to recognize from text-book descriptions.

As is well known, Losch in 1875 was the first to describe this organism, and numerous observers have since confirmed his researches. Among these may be mentioned Kartulis, Kruse, Koch, Manson, Councilman, Lafleur, Dock and Leuckart.

The organism belongs to the Protozoa, class Rhizopoda. It is simply a mass of protoplasm, provided with a more or less distinct nucleus, hence the ease of mistaking it for other similar unicellular organisms or even large cells.

When at rest the organism may be circular or oval in shape; if arrested while in motion, it may be irregular. It is more refractive than other cells occurring in the feces, with the exception of the monads, and the protoplasm has a peculiar, faintly greenish hue, almost exactly like that of certain malarial crescents. Its size varies greatly, from 5 to 35 mmm. in diameter, but most of the amœbæ seen ordinarily measure from 15 to 25 mmm. in diameter. While many authorities claim that the amœbæ seen in any one case are all about the same size, this has not been my experience, the amœbæ differing widely, some being very large, others small. The shape, also, varies much, some being perfectly circular, others oval, and others irregular in shape.

As ordinarily described the organism is said to consist of two parts, an inner, granular portion, called the endoplasm and an outer, clear portion, called the ectoplasm. This description has been the cause of mistaking the organism for large cells, the inner portion corresponding to the granular nucleus and the outer portion to the protoplasm. As a matter of fact, this differentiation cannot be made out in all cases by any means, and very seldom in amœbæ which are not motile. While, doubtless, the two portions mentioned exist, too much stress is laid upon this characteristic, resulting in confusion, as only the experienced observer can in most instances distinguish them. The organism possesses a nucleus, but this is often difficult to make out, especially in moving amœbæ. It is situated somewhat to one side and is very refractive; its outline is often more or less irregular. The endoplasm forms most of the substance of the organism, is of a peculiar, faintly greenish hue, very finely granular, resembling finely-ground glass, and generally shows a number of perfectly circular or oval, so-called vacuoles. The vacuoles are spaces within the protoplasm of the organism, clear cut in outline and collected in groups within the protoplasm. Many of them seem to contain two or four very refractive dots resembling micrococci. Although these spaces are generally called vacuoles, it is by no means certain that they are so. Certainly they do not resemble the vacuoles in blood-corpuscles and it always appears as though they do not penetrate entirely through the organism, their floor seeming to be formed by a thin, veil-like layer of protoplasm. It is often impossible in certain instances to believe that these peculiar spaces are vacuoles, and it is by no means settled that they are so. These spaces vary slightly in size and in number in different amœbæ. The small amœbæ seldom show them, but the large ones seem often to consist entirely of a collection of them, surrounded by a small amount of the protoplasm. It would seem from this that such an amœbæ might be a sporulating body, as the oval spaces resemble very strongly the segments of the sporulating malarial plasmodia save that they are larger. The amœbæ generally show more or less material within their protoplasm which they have absorbed. They often contain red blood-corpuscles, bacteria, pigment particles, etc. Often these inclusions are so numerous that the structure of the amœba is entirely hidden. When it can be seen the ectoplasm consists of a narrow rim of a clear, light green color surrounding the darker endoplasm.

As to the mobility of the amœba, they are always motionless in feces which have not been kept warm, as a temperature below 75° F. renders them immobile, but it is often possible, after preparing a specimen upon a slide from such feces, to render the organisms motile by gently warming the slide over an alcohol lamp. The motility of the organism varies, but it is generally a slow ameboid motion, the organisms throwing out rounded protoplasmic processes, exactly as do leucocytes. These processes are always perfectly clear and formed by the ectoplasm, and these are often the only portions of the organism which shows the differentiation into ectoplasm. In rare instances the movement is rather rapid, the processes being thrown out quickly and the whole organism moving in an eccentric jerky manner. More often, however, the change in position is very gradual, and only careful watching will detect it. Often, also, the organism does not change its position, but merely its shape, the protoplasmic processes being projected and retracted, sometimes so very slowly that close scrutiny only will detect them. Often also, a peculiar

undulatory motion of the border of the organism is noted, exactly like that occurring in the malarial parasites.

When the temperature is that of the body the amœba are most active and progress by an almost imperceptible projection and flowing into such projection of the mass of the organism. When, however, the temperature is low, it can be seen that the protoplasmic projection gradually becomes larger until at last the granular endoplasm flows into it. This process is repeated and thus the organism changes its position.

The color and refraction of the amœba should serve to distinguish it from cellular material, as intestinal epithelium, it being of a peculiar, faint green color and very refractive, which is marked enough so that even with a ⅔-inch objective it can be picked out from the surrounding cellular matter. These properties, however, do not serve to distinguish it from the monads and cercomonads, which are also greenish in color and refractive, but they are much smaller than the large amœbæ and much more actively motile, not throwing out protoplasmic processes, but moving by means of flagella. To one who has seen the amœbæ these organisms could never be mistaken for it, but mistakes have been made, especially when the observer had only the text-book description as a guide.

To sum up the amœba is a round oval or irregular protoplasmic body, varying in size; motile or immotile, the motility being ameboid in character and, when present, being generally moderate; pale or faint green in color; refractive, with sharply-cut border, and containing a circular or oval, lighter colored, space, known as a vacuole. In some a darker colored nucleus can be distinguished and in the immotile organisms a darker colored central or eccentric portion, containing the vacuoles and comprising the greater part of the parasite, and known as the endoplasm, can be seen, surrounded by a narrow or much smaller layer, lighter in color and clear, known as the ectoplasm.

Nothing is known as to the method of reproduction of the parasite, but it is generally believed to be by sporulation. If this is so, it is possible that the so-called vacuoles are in reality spores, the mother parasite eventually rupturing and thus setting them free. Reasoning from what occurs in other similar organisms, this seems the most probable method of reproduction. It is impossible in observing a large circular amœba, filled with the oval or round spaces so that only a thin strip of protoplasm remains visible, to resist the impression of its resemblance to the large, segmenting tertian plasmodia, just before the segments separate and become free. Another interesting analogy between the two parasites is that in both, solutions of sulphate of quinine arrest all motion immediately, and destroy them. In many amœbæ I have noticed the so-called vacuoles change their position, floating with the protoplasmic currents within the amœbæ.

The Staining Reactions of the Amœba Coli in Feces.—It is not a very difficult matter, where the amœba are numerous in the feces, to obtain well stained specimens if sufficient care is taken in their preparation. While, undoubtedly, the amœbæ show to greater advantage when stained in sections of tissue, the method of staining them in feces is most practicable and useful, and if the smears are made sufficiently thin, the organisms will show very perfectly. So little is said in the recent text-books regarding the appearances presented by the stained amœbæ that a somewhat detailed account of their staining reactions is of interest. Like all protozoan organisms, the nucleus stains with more or less difficulty, but I have found that carbolic fuchsin stains it, as well as the nucleolus, very easily and deeply, while methylene blue stains it dimly and often not at all.

I have tried a large number of different staining solutions, but have found that only three are really worthy of use, in that they are sure, rapid and show the minute structure of the amœba well. These are: Loeffler's methylene blue solution, carbolic fuchsin solution, and thionin solution. Of these solutions, Loeffler's methylene blue is the quickest and best stain for general use, while the carbolic fuchsin solution is by far the best where it is desired to stain the nucleus and nucleolus, as well as certain peculiar bodies within the protoplasm of the amœba. Toluidin blue is also a good stain. The thionin differentiation method recommended by Mallory, which often gives beautiful results in staining amœbæ in tissue, gives but fair results in the staining of the organisms in the feces and can hardly be said to be differential, as other structures in the feces take and hold the stain. It is a useful stain, but methylene blue is far better and much more easily applied.

Having found a specimen of feces containing numerous amœbæ the smears are prepared as follows: Several cover-glasses are thoroughly cleaned and placed in a row upon the edge of the table. With a sterilized platinum loop a small flake of mucus is picked out of the feces and placed upon a cover-glass. This is repeated, a minute flake of mucus being placed upon every other cover-glass. The intervening clean cover-glass is then dropped gently down upon the glass containing the mucus, and then the two are slid apart, very gentle pressure being used in doing so. By proceeding in this way a dozen or more very even, thin smears can be secured in a few minutes' time. The smears are then placed face up in equal parts of alcohol and ether and allowed to harden for thirty minutes. If the feces are warm when the preparations are

made, many of the amœbæ will be hardened while undergoing amœboid motion. After hardening, the smears are ready to stain.

Staining Reactions with Loeffler's Alkaline Methylene Blue Solution.—The smears are stained in this solution for from three to eight or ten minutes; about five minutes gives the best results; they are then washed in distilled water and mounted in Canada balsam.

The amœbæ take the blue stain very well, staining almost as deeply as the nuclei of the epithelial cells. In such stained preparations three stages of the amœbæ can be detected. The smaller amœbæ staining comparatively uniformly; larger ones, staining less uniformly and containing one or more vacuoles; and still larger ones, riddled with vacuoles and staining very deeply. The smaller or young amœbæ stain much more intensely than the larger ones, and with the methylene blue seldom show a nucleus. No vacuoles can be seen, nor do they often contain red blood-cells. The protoplasm is of a rather dark blue ground color, with small oval or round lighter blue areas scattered through it. The smallest amœbæ do not show these light areas, but stain almost uniformly throughout. No distinctions can be traced between the ecto- and endoplasm. These small amœbæ are generally round, but sometimes show small pseudopodia which generally stain very intensely. Some of the small amœbæ show a peculiar mottled appearance, light and dark stained areas alternating throughout their protoplasm. These small forms are evidently young amœbæ.

In all the preparations the most numerous forms of the amœbæ are those to be described. They are large, generally round or oval in shape, although if the preparations are made when the amœbæ are active, many of them are irregular in shape, showing pseudopodia. The protoplasm in these amœbæ stains irregularly, but no distinct differentiation into ecto- or endoplasm can be made. One portion of the amœba stains very densely and there is a gradually shading off into a light blue color. In the irregular forms this is most noticeable, the pseudopodia staining very dimly, due to the fact that they are composed of ectoplasm which takes the stain but dimly. Some of pseudopodia, however, stain very intensely, due probably to the fact that the endoplasm had flowed into them just before hardening. These fully grown amœbæ show from one, to three or more, large vacuoles, which are entirely unstained, but besides these there are numerous small, oval or round, very dimly-stained areas, scattered throughout the protoplasm, which are evidently not vacuoles and correspond to the same areas observed in the very young forms. Scattered between the oval, dimly stained areas, are very deeply stained small portions of protoplasm. The staining phenomena of these amœbæ exactly resemble those of the large, segmenting tertian malarial plasmodia. The vacuoles and the dimly-stained areas are entirely distinct, the dimly-stained areas being oval or round, much smaller than the vacuoles, having a dim outline and evidently not penetrating the organism as do the vacuoles. Many of these amœbæ contain red blood-cells which do not stain, but show as round, or irregular, light green areas, scattered through the protoplasm of the parasite. In a few of the amœbæ very deeply stained, almost black, oval-shaped structures can be seen, generally arranged near the periphery of the organism, and resembling bacilli, save that they are too large and are often irregular in shape.

In preparations stained for some time, some of the large amœbæ show a very deeply-stained nucleus, situated, as a rule, eccentrically, but sometimes near the center. It stains a dark lilac and contains numerous more deeply-stained, almost black granules. Surrounding this nucleus is sometimes seen a more lightly-stained area with a deeply-stained, almost black border. Besides blood-corpuscles, the protoplasm of these amœbæ contains numerous deeply-staining rods and dots, evidently bacteria of various kinds. Besides the two forms of amœbæ described, large round forms are seen, containing numerous vacuoles and staining more or less dimly. No nucleus can be demonstrated in these forms, nor can the small, oval, unstained areas be seen. In most instances these amœbæ are simply riddled with vacuoles, the amœba consisting of a stained shell perforated by vacuoles. Many of these show evidences of pigmentation. These are probably degenerate amœbæ, undergoing, just as does the plasmodium of malaria, vacuolization and pigmentation. It is a significant fact that such amœbæ never show any inclusions in the way of blood-corpuscles or bacteria.

Fig. 1. Young amœba, showing deeply-stained nucleus, and dimly-stained ectoplasm. No vacuoles. Obj., ⅙ inch. Fig. 2. Young amœba showing deeply-stained nucleus and so-called vacuoles. Obj., ⅙ inch. Stain, toluidin blue. Fig. 3. Full-grown amœba showing deeply-stained nucleus and oval spots; also vacuoles. Obj., ⅙ inch. Fig. 4. Amœba showing deeply-stained oval spots, but no nucleus. Obj., ⅙ inch. Stain, toluidin blue. Fig. 5. Young amœba showing deeply-stained nucleus and endoplasm, dimly-stained ectoplasm. Obj., ⅙ inch. Stain, toluidin blue. Fig. 6. Very large amœba, staining almost uniformly throughout, and filled with red blood-corpuscles, which are greenish in color. Obj., ⅙ inch. Fig. 7. Full-grown amœba showing deeply-stained nucleus, dimly-stained ectoplasm, and several red blood-corpuscles. Obj., ⅙ inch. Fig. 8. Full-grown amœba showing two red blood-corpuscles, and three dimly-stained pseudo-vacuoles, containing deeply-stained rods and dots, probably bacterial in nature. Obj., ⅙ inch.

Staining Reactions with Fuchsin.—Smears are stained with carbol fuchsin for from five to ten minutes, washed in water and mounted in Canada balsam. This stain is especially useful in demonstrating the nucleus, which stains very beautifully. The same structures are seen in amœbæ stained by this method as by methylene blue, but in addition the nucleus, nucleolus and certain other details can be made out. The nucleus stains a deep red, is usually situated eccentrically, near the edge of the parasite, probably at the juncture of the ecto- and endoplasm, but it may be more central. It contains a small, more deeply-stained nucleolus, and a few almost black granules, while the nuclear substance contains minute, more deeply-stained areas. The nucleus is round or oval in shape and regular in outline. As noted before, the large amœbæ containing great number of vacuoles, do not show any nucleus.

Besides the nucleus and its contents, the fuchsin stain demonstrates with the protoplasm of many of the amœbæ some very peculiar bodies, the nature of which it is impossible to conjecture. Scattered irregularly through the protoplasm are variously-shaped particles, stained a deep brownish red, and especially numerous near the nucleus. These particles are oblong in shape, as a rule, flat and are much larger than any bacterium. They present often a fractured extremity, as though they were crystalline in structure, and it may be that they are certain crystals absorbed from the feces.

In all preparations from the feces, however stained, amœbæ are seen evidently undergoing fragmentation. Numerous knob-like outgrowths are seen, almost entirely separated from the parasite and some which are separated. These fragments stain deeply, and the fragmenting parasite usually shows a normal appearing nucleus, thus showing that the process is a degenerative and not a reproductive one.

Little need be said of the thionin stain. It gives similar results to those just described but is not nearly as satisfactory as the methylene blue or carbolic fuchsin.

This much can be said to have been demonstrated by the study of stained specimens of the amœbæ:

1. That vacuolization is a degenerative process, as the young amœbæ show no vacuoles, the full-grown healthy ones, few, while the amœbæ in which they are most numerous are degenerate bodies, showing neither a nucleus nor inclusions of any kind.

2. That there occur in all but the degenerate forms of amœbæ, small, round or oval, unstained areas, uniform in appearance, and most numerous in the large, full-grown forms, and entirely absent in the vacuolated shells of amœbæ. These areas resemble similar areas observed in stained, segmenting malarial plasmodia, which are, in them, due to the young spores, which take the stain but faintly. Reasoning from analogy, it may be that these areas in the amœbæ are also spores.

3. That in the protoplasm of the amœba, there occur peculiar structures, evidently not bacterial in nature, the significance of which it is impossible to decide. It may be that they are certain crystals which occur in the feces and which have been absorbed by the amœbæ.

4. That degeneration of the amœbæ takes place in two ways, *i.e.*, by vacuolization and by fragmentation.

In closing this paper I desire to express my obligations to Colonel Girard, Commanding Officer of the Hospital, for his uniform encouragement and assistance.

A PRELIMINARY NOTE ON THE RELATION OF THE FORM OF THE TUBERCLE BACILLUS TO THE CLINICAL ASPECTS OF PULMONARY TUBERCULOSIS.[1]

BY HENRY SEWALL, PH.D., M.D.,
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DURING the winter of 1889-90, I gave some attention to a problem which had previously been suggested to me by Dr. Welch, of Johns Hopkins University. It was to determine whether any relation exists between the characters of the tubercle bacillus, its staining reactions and varieties of form, and the clinical symptoms of pulmonary disease. The work was done under exceptional advantages at the Adirondack Cottage Sanitarium, where, from first to last, more than seventy patients were the subject of inquiry. A summary of results was published in the MEDICAL NEWS, July 25, 1891.

The investigation proceeded from two directions: (1) Pure cultures of tubercle bacilli were studied as to their form and staining qualities; (2) tuberculous patients under observation were divided into arbitrary groups, according as their clinical signs and symptoms seemed to enable one to discriminate between (*a*) those who were recovering; (*b*) those who were simply holding their own, and (*c*) those who were manifestly failing.

The sputa of all these individuals were carefully examined, and the tubercle bacilli found therein were compared as to form and in some cases as to their staining properties. The pure cultures of tubercle bacilli consisted of tubes kindly furnished me by Drs. Councilman and Abbott, of Johns Hopkins, Drs. Vaughan and Novy, of Ann Arbor, and Dr. Trudeau, director of the Adirondack Sanitarium. All the cultures were old and probably, as will be assumed, of low virulence, except one furnished by Dr. Trudeau, which was new and the infective power of which had recently been found to be very great. The conclusiveness of this phase of my work suffered greatly from the lack of facilities to incubate new

[1] Read before the Colorado State Medical Society, 1900.

cultures on various media and to test their virulence by inoculation.

It is now a matter of elementary knowledge that the tubercle bacillus is distinguished from most other microbes by the fact that, after being stained with an aniline dye, it resists decolorization by acids much longer than most bacteria. The relation of the bacilli to stain was tested in the following way: Cover-slip preparations were made from the various cultures, and they were stained for a definite time in carbol-fuchsin. The slips were placed on the microscope stage, upon a specially-prepared slide, permitting active irrigation with fluid without movement of the specimen. When a stream of very dilute nitric acid was allowed to flow under the preparation, the smear quickly lost its color, but the retention of color on the part of the bacilli from the fresh, virulent culture was preceptibly longer than in the case of those from the old and presumably non-virulent cultures. That is to say, the virulent bacilli resisted decolorization longer than the non-virulent. If the acid did not remain too long in contact with the specimen, its removal by a stream of water was followed by a return of color, and this alternation of reactions was produced a number of times.

But, as in the first case, the final decolorization of the virulent bacilli required a more prolonged action of the acid than did that of the other forms. As these observations were repeated day after day, the difference in resistance to the action of acids exhibited by the various cultures gradually diminished. It is a plausible assumption that the virulent culture, exposed to the diffused light of the laboratory, little by little lost its toxic power and with it the tenacious hold upon the aniline dye. I made no extended observations on the morphology of the bacilli found in pure cultures, but it is worth recording that the forms found in the virulent culture were uniformly like those presently to be described as characteristic in the sputa of rapidly-failing cases of tuberculosis, while in the non-virulent cultures the bacilli presented the features preponderating in the expectoration of "good" clinical cases. It is hardly necessary to say that the tubercle bacillus, while a very distinctive organism to the trained eye, presents much variety in its appearance. The length of the bacillus is said to vary from one-quarter to three-quarters of the diameter of a human red blood-corpuscle, the thickness being one-fifth to one-sixth of the length.

When studied in sputum, tubercle bacilli appear to me to present the following well-marked varieties of form, with more or less complete gradations between: (1) A very short, relatively-broad rod; (2) a long form represented by a chain of rods; (3) a long form homogeneous in structure; (4) a long form of a beaded appearance, as if composed of a string of spores. Many investigators have described a branching variety of the tubercle bacillus, which some have regarded as a result of degenerative growth, others, as the sign of its relation to higher biological species. The occurrence of such departures from type are not likely to attract the average observer. That a definite species of bacteria may appear under widely different forms has been abundantly demonstrated, Westbrook having recently analyzed the varieties of the diphtheria bacillus, and Adami shown that the colon bacillus may appear as a diplococcus.

It seems to be the common belief that the composition of the culture medium and the conditions of growth as to supply of oxygen, heat and moisture, have much or all to do with this morphological diversity. A difference in the toxic virulence of the various forms is only suspected.

The present paper makes no pretense of presenting explanations of facts, but is limited in its scope to the practical question, Does the form of the tubercle bacillus as found in the sputa, have any relation to the physiological condition of the patient? In the clinical classification of patients I made in the Adirondacks, I was impressed with the fact that the failing cases, with active destruction of lung tissue, produced sputa characterized by a preponderance of the shortest rod-like forms of bacilli. In cases that were doing well the short and jointed germs were few or wanting, the prevailing forms being slender, homogeneous rods of greater or less length, the substance often being broken into spore-like droplets. In old chronic cases, in which there had been a great loss of tissue, but in which the disease had been fairly-well arrested, or in which the malady had made such extensive havoc that the maintenance of life itself was a demonstration of the low virulence of the infecting organism, the bacilli were long and beaded. A few observations were made to test the resistance exhibited by these different forms to decolorization by acids. This difficult subject was not sufficiently explored to support definite conclusions, but so far as the observations went it appeared that the short rods held their color longer under the action of acids than did the other forms.

To-day I am strengthened in the opinion, formed nearly eleven years ago, that the form of the tubercle bacillus, as it is demonstrated in the sputum, is an important indication of the virulence of the tuberculous process, and as a corollary I will venture to suggest that it is a useful guide to prognosis. It is a truism to say that the tubercle bacillus is always dangerous and may always be deadly. Most of those who were classed as "good" cases in my Adirondack list are long since under ground. As practical physicians we are familiar with the enormous influence of habits and environment upon the well-being of the tuberculous subject. Yet we are continually facing anew the strange fact that of two consumptives, both in similar physical condition, with apparently equal chances for recovery, one progressively gets well, but the other gradually slips backward, here a little, there a little, until no hope remains. Again, in the temporary physical backsets to which every tuberculous subject is liable, one case recovers perfectly as from a

passing indisposition, but another rises broken and permanently hurt. It has seemed to me that the form of the bacilli found in the sputa has great significance in the discrimination of these classes of cases one from the other.

The short, deeply-staining rod or chain of rods of moderate length is the usual form in many active cases. The long rods, particularly if irregularly broken, betoken a milder process, and the chains of spore-like beads characterize the very chronic cases which make us wonder at their tenacious hold on life. If there be a *good* form of the tubercle bacillus it is, as seems to me, a rather long, slender rod, ill-staining or staining irregularly, as if the body of the microbe were irregularly corroded on the sides. It is found in cases apparently passing on to cure. Sputa of the same individuals examined month after month have seemed to me to vary in their bacillary characters with the state of the patient as regards the disease.

RHINOSCLEROMA.*

BY H. JARECKY, M.D.,
OF NEW YORK.

THE case which I have the pleasure of presenting, would perhaps be better described by the term scleroma respiratorium than by the title of this article. However, the title adopted in this paper seems to be so universally accepted for the condition that I have used it as above. The disease is so rare and peculiar, that I have thought that a short historical sketch would be interesting.

The malady was first described by Hebra[1], in 1870, from the observation of nine cases, four male and five female. Since then many writers have added their mite of knowledge, furthering the study of the disease. Its home seems to be in Russia and Austria. In the United States, according to Dr. Freeman,[2] there have been only half a dozen cases reported previous to his, and in Central America about twenty-three.

It is characterized, according to Hebra, by a gradual thickening or infiltration of the integument or mucous membrane of the ala or septum. Nodules then form, which are circumscribed, flat or elevated, hard and painful to the touch, and are covered by normal or slightly wrinkled epidermis of a dark red or shining color. Glands and hair-follicles are absent from the integument.

The disease progresses painlessly and insidiously, the nodules project from the nose and its side, and cause the organ to be deformed, thickened and widened, well shown in Freudenthal's[3] patient. The whole mass is as hard as ivory. Thence it spreads to the angles of mouth, lips, the opening of the mouth, as in Mikulicz's[4] case, scarcely admitting the tip of the little finger. Sometimes the cheeks and eyebrows are attacked. The malady also works its way backward through the nasal passages, causing stenosis, and attacks the pharynx, palate, uvula, larynx, trachea and bronchi. It may also spread through the lacrimal duct and, as in Pick's[5] case, through the Eustachian tube to the external ear. The tongue is rarely affected. The progress is by a non-inflammatory infiltration of the tissue which exhibits no tendency either to break down or to form ulcerative processes.

Although Hebra considered that the external nose was always affected in this ailment, it was soon discovered that other parts of the respiratory tract might be primarily affected, as in our patient. Ganghofner[6] demonstrated that *chorditis superior hypertrophici chronica,* and Türck showed that Stoerck's *blennorrhœa chronica* belonged to the same class, although these had always been considered separate laryngeal affections. In 1882 Frisch[7] demonstrated bacteria to be present in rhinoscleroma.

Microscopically the infiltration commences with numerous small cells, among which are large or spheroidal (Mikulicz) ones. The bacteria are usually found in, and only rarely between these cells. Later these round cells are transformed into spindle-shaped ones and finally into a dense connective tissue. The bacteria occur in pairs or fours, encapsulated in a colloid substance. They resemble Friedländer's pneumococcus and take the Gram stain.

When the degeneration takes place and the connective tissue is formed, one sees scar-tissue of all shapes and varieties producing all sorts of contractions. The disease progresses so slowly that no symptoms are noticed for some time, but later the sufferer complains of a dryness in the nose and throat and a difficult nasal respiration. If the larynx or trachea is affected, there is troublesome cough and hoarseness and dyspnea finally causes the patient to seek medical aid. A peculiar fetid odor, distinct from that of atrophic rhinitis with ozena, is usually present, but is not found in the patient whom I now present.

Yetta S., thirty-two years old, a native of Russia and residing in the United States for eleven years. Parents died while she was yet a child, so that nothing is known of them, and one sister is living in good health. She has always been well and has been married fourteen years, having six healthy children ranging from ten months to thirteen years old. She has not had any miscarriages. About four years ago she noticed a slight pain on swallowing, and upon examination a growth was found in the throat for which nothing was done, a mouth-wash only being prescribed. For the past nine months, she has experienced some difficulty in breathing. This has been gradually getting worse and it was for the dyspnea that she sought treatment.

Upon examination I found the nose to be the seat of an atrophic rhinitis and filled with a frothy discharge, the membrane being very much swollen. In the mouth, bands of connective tissue passed backward to the palate from the back part of gums. The tonsils and uvula were missing. Hanging from the right posterior pillar

* Read before the Society of the Alumni of the City Hospital, November, 1900.

was a growth the size of a large nut, with a very fine pedicle. Posterior rhinoscopy could not be made at the time. The epiglottis was found to be atrophied and folded upon itself, so that on the under surface, the right and left halves were in apposition. Stenosis was so marked that no view of the larynx could be obtained.

I snared the sessile growth and submitted it to Dr. Beaman Douglas, Pathologist at the Manhattan Eye and Ear Hospital, for examination, who reported that it consisted of tonsillar tissue. Suspecting a case of rhinoscleroma, the bacilli were looked for, but were not found. Posterior rhinoscopy then revealed cicatricial bands extending from the posterior pillars to the lateral walls of the pharynx.

In arriving at a diagnosis many things had to be considered. Syphilis was excluded by antisyphilitic treatment, absence of pain during disease, the number of healthy children, no loss of tissue in the scars and by there being no lymph-glands enlarged.

Tuberculosis was excluded by the absence of constitutional symptoms and there was no broken-down necrotic tissue, which would appear as the disease extended over such a long period. Lupus by freedom of pain and ulceration and burn from caustic, by history.

The diagnosis of rhinoscleroma was emphasized by the absence of pain, length and duration of disease, loss of uvula, only a smooth scar marking its place, and the amount of cicatricial bands.

The disease attacks patients between the ages of fifteen and forty-five years. The prognosis is unfavorable, as no curative treatment has as yet been discovered. Where the disease processes do not encroach on the larynx or trachea, the disease has no effect upon the general health. The treatment, in a general way, consists in relieving externally the deformity and internally the stenosis of the nasal passages, nasopharynx and of the larynx.

Cutting away the growth and rhinoplastic operations have been advised. Injections of arsenic, salicylic acid, carbolic acid, chloride of zinc, nuclein, rhinosclerine, etc., have been tried with varying success. When the nares are closed or narrowed, excising portions, using galvanocautery, dilating with tents, etc., have been recommended.

In this patient the laryngeal stenosis is the only disturbing symptom, and this is being treated with Schrötter's intubation tubes with relief, although there is still some dyspnea. Upon casting a general glance over the case, I think that we must conclude that the disease commenced in the back part of the uvula and soft palate, and thence spread to the mouth, nasopharynx, pharynx, larynx and trachea.

The process seems to have come to an end in the upper parts, but is probably active in the larynx and trachea. The occurrence of the pendulous growth of atrophied tonsil tissue can only be accounted for by the process having occurred in the tonsil, and the resulting marked contraction of the connective-tissue formation having caused the separation of the part.

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1895 Lexington Avenue.

CLINICAL MEMORANDUM.

SUBGLOTTIC GROWTHS; REPORT OF CASES WITH EXHIBITION OF IMPROVED INSTRUMENTS.[1]

BY ROBERT C. MYLES, M.D.,
OF NEW YORK.

THE recognition of the difficulties which I have experienced in removing some benign growths from the subglottic region in certain patients has prompted me to bring this subject before you. After trying and failing with nearly all the forceps and instruments that have been advocated, I constructed the one which I present to you in conjunction with this paper. The ideas were obtained from Sir Morrell MacKenzie's tube-forceps and Dr. Dundas Grant's double-hinged, diamond-shaped laryngeal forceps, and was made for me by Ford & Co. of New York City.

The chief interference with the success of an attempted operation in the subglottic region is due, at times, to the uncontrollable cough and glottic spasms, which shut off the operative field. In cases of benign growths it is especially desirable that no injury should be done to the healthy parts of the vocal cords and laryngeal tissues, and the ideal instrument wanted is one that will remove only so much as will fall within the jaws, which are closed at the distal end. I would suggest the use of this instrument in cases of subglottic papilloma occurring in children, but thus far I have not been fortunate in finding a suitable patient since the instrument was constructed.

I note that this spasmodic closure of the larynx is no new obstruction. Sir Morrell MacKenzie, in his remarkable work on "Growths in the Larynx," published in 1870, in Case LXXIX. of his 100 consecutive ones, says: "This growth proved a very difficult one to extirpate, as the vocal cords became spasmodically approximated when any instrument was introduced within the larynx. A very great variety of instruments were accordingly used. The first pieces were removed with the tube-forceps; at a later period I used the common anteroposterior laryngeal forceps, and, finally, a portion was taken away with Stoerk's wire guillotine."

[1] Read before the sixth annual meeting of the American Laryngological, Rhinological, and Otological Society.

One of my most interesting cases was that of the Rev. Mr. T. C., age twenty-eight years, who applied to me in June, 1898. He said that three years previously his voice began to lose in tone and vibration, and grew worse from that time until he had some growths removed in March, 1897. Two months afterward hoarseness began again, and he had more growths removed. He seemed to be comparatively well, with a fair speaking voice until a few weeks previous to coming to me when he had a hemorrhage, which apparently came from the larynx.

When I examined him, both ventricular bands were covered with wart-like excrescences which extended upon the posterior surface of the epiglottis. Both vocal cords were covered with papillomatous growths which extended downward over the subglottic region and were much more prolific on the left than on the right side. I had no difficulty in excising and removing the growths from the surface of the larynx, above the vocal cords, with the tubal-forceps as well as the MacKenzie cutting forceps. Attempt after attempt to remove the subglottic growths was followed by failure and this after many applications of solutions of cocaine, varying in strength from ten to one hundred per cent. Finally I succeeded in removing the growths with a modification of the forceps that I present to-day. The growths removed would number somewhere between fifty and one hundred. The patient has had no difficulty for the last year and is filling a responsible position in one of the largest churches in New York City, and now has a clear and resonant voice.

Fig. 1.—The instrument consists of a handle with finger-ratchet, extension Schroetter tube, and a revolving, unilateral forceps. Its mechanism is similar to that of Dundas Grant's forceps.

Another interesting case, Mrs. X., age fifty years, presented herself, complaining of hoarseness, difficulty in speaking and violent laryngeal spasms. Examination revealed a pale growth about ten mm. long; its middle third was situated beneath the processus vocalis, one-third of the growth extending beneath the respiratory glottis; the anterior third extended beneath the vocal glottis. This patient was most intractable when any foreign agent was introduced into the larynx. The spasms and coughs were violent and intense, applications of strong solutions of cocaine which were applied at intervals for an hour, did not seem to control the reflex phenomena. I was specially anxious to obtain a deep specimen of this growth for a microscopical diagnosis. I had used various forms of cutting and excisor tube-forceps, and succeeded in removing only small portions of the growth after many trials. Finally I made one prolonged and desperate effort to remove all of the growth in sight, this was accomplished with the instrument presented, after a two-hours' seance, during which time I used strong solutions of cocaine in a liberal manner, in addition to large doses of bromide of potash and a hypodermic of sulphate of morphine and atropine.

The author remembers with regret the case of a little child with multiple papilloma of the larynx and subglottic space, and believes that, if the instrument presented could have been used, the little patient's life might have been saved. Laryngotracheotomy was performed by a general surgeon in the writer's presence; the operation was a complete success in every detail, and every step of the operation was most skilfully carried out. The growths, covering the subglottic space, which seemed to be the ones that were causing almost complete suffocation, were thoroughly removed, but septic bronchopneumonia caused a fatal end two weeks later.

I commend the instrument for your consideration and trial, in non-malignant, infraglottic growths in childhood, as well as in adolescence.

MEDICAL PROGRESS.

Source of Blood in Urine.—JOSEPH WIENER, JR. (*N. Y. Med. Jour.*, Mch. 9, 1901), first attempts to discover from what part of the urinary tract the blood comes, then seeks its cause. In early life stone in the bladder, tuberculosis of prostate or bladder, gonorrhea, sarcoma of kidney, or renal disease following an exanthema may be found. Adults have urethral

stricture, stone and new growths of bladder and kidney. In old age enlarged prostate, stone and newer growths predominate. Blood appearing between the acts of micturition is from the urethra; that appearing at the beginning of stream is prostatic or from deep urethra. Clots at beginning or end of clear urination are urethral, prostatic or vesical. In kidney hemorrhage the blood is intimately mixed with the urine. In renal hematuria, movable kidney, and renal stone the hemorrhage may appear and disappear suddenly. Rest relieves hemorrhage due to stone, or movable kidney, but may fail to influence that from tuberculosis or malignant growth. Long or short thin clots denote renal hemorrhage, long thick clots, urethral hemorrhage. If from bladder, prostate or urethra the blood readily sinks in the urine, but kidney blood remains intimately mixed with the urine. If the ratio of albumin to hemoglobin is above 1 to 16, there is albuminuria as well as hemorrhage and therefore probably nephritis. A careful examination of all the organs may show a cardiac lesion, tuberculosis, or malaria, and thus aid in diagnosis. Urethral hemorrhage is chiefly due to stricture or traumatism, prostatic hemorrhage to enlargement, stone, new growth, or occasionally to varicose veins, bladder hemorrhage to stone, tuberculosis or new growth, and renal hemorrhage to stone, tuberculosis, tumor, injury, and nephritis. Vesical tuberculosis is most frequent between 16 and 25 years, the urine is very light, odorless, feebly acid, sometimes containing tubercle bacilli; the stream is often arrested on account of pain, the bladder is irritable at night, bright hemorrhage may appear suddenly not influenced by rest; there may be a few drops of blood at end of urination accompanied by straining; there are distinct periods of quiescence uninfluenced by violent exertion, sudden relief of suprapubic pain and rapid cessation of pain in glands after urination and persistent post-scrotal pain; vesicle calculus is most frequent in adults, the urine is turbid, with mucus, pus, oxalates, urates, or phosphates; the stream is arrested involuntarily; the irritability of the bladder ceases at night; the hemorrhage ceases with rest and is most profuse at end of stream; there are no distinct periods of quiescence except with rest, the pain often persists after emptying the bladder, and there is no post-scrotal pain. In renal calculus the hemorrhages are usually small and frequent, in tumor, profuse and at irregular intervals, and the pain may be worse at night. Frequency of urination at night occurs in renal tuberculosis, but only in the daytime in calculus.

Preservative for Suprarenal Extract.—Boric acid, glycerin, or weak alcohol will preserve the gland for some weeks, but materially weaken its physiological effect. Camphor by its odor prevents detection of decomposition. Silver and mercury preparations are precipitated and render the extract practically worthless. By experiments on animals and subsequent tests clinically, SEYMOUR OPPENHEIMER (*N. Y. Med. Jour.*, Mch. 9, 1901) has found that an almost permanent solution can be made by adding gm. 4.0 (℥i) of dried suprarenal to gm. 30.0 (℥i) of one-per-cent. solution of resorcin, and that the hemostatic and vasoconstrictor properties are not affected.

Biological Test for Human Blood.—The differentiation between human blood and that of animals is a problem of highest importance from a forensic point of view but as yet no test has been discovered which is infallible. UHLENMUTH (*Deutsche med. Woch.*, Feb. 7, 1901) describes a reaction which he is still engaged in elaborating and which promises to be the most reliable yet known. Its underlying principle is the fact that the blood of warm blooded animals, when small amounts of the blood of an animal of a different species are thrown under the skin, responds by forming bodies which when added to the blood of any animal of the species which was used to furnish the material for injection produce a well-marked physical change in it. For example if small quantities of defibrinated human blood are injected into the peritoneal cavity of a rabbit at intervals of 6-8 days, after 5 or 6 injections certain specific substances appear in the animal's blood. If to a weak solution of human blood in physiological salt solution a few drops of serum obtained from such a rabbit are added, a distinct turbidity occurs which on standing develops into a flocculent precipitate while similar dilutions of the blood of other animals (18 species have already been tested) give absolutely negative results. The reaction is extremely delicate and is effective even with traces of blood obtained from dried spots after four weeks of exposure to the air.

Incubation in Yellow Fever.—There are three distinct classes of patients to be considered from this point of view, *vis.*, those who go from a clean to an infected environment and remain there until the fever developed; those who go from an infected to a clean environment and there remain until the fever appears; and cases in which there has been only a single short exposure to infection. As can be seen the latter is most definite, but even here there is a chance of carrying the infection by clothing or other means so that incubation does not begin until some tnme after exposue. HENRY R. CARTER (*Med. Rec.*, Mch. 9, 1901) found that in Class I. the fever developed in from three to sixteen days after the first exposure; in Class II. from one to eight days after the latest exposure, nearly all developing by the third day; and in Class III. the incubation was from three to eight days, half of the cases showing fever on the third day.

Acute Gastric Ulceration.—N. HEINEMAN (*Med. Rec.*, Mch. 9, 1901) considers that even an arteriole, if eroded in only a small part of its circumference so that it cannot retract or form a clot, may be a source of dangerous hemorrhage. The acute ulcer has no indurated edges and may be so small as to be easily overlooked. It is most often found near the cardia in the grand cul-de-sac, or on the anterior wall near the greater curvature, a situation in which chronic ulcer is seldom found. Usually sudden and excessive hemorrhage is the first sign. Exceptionally there are nausea, gastric pain, vertigo, and syncope; and when there is no vomiting, sudden pallor with thready pulse, chills, or convulsions may lead to the suspicion of ulcer. The condition must be differentiated from rupture of aortic or miliary aneurism, cirrhosis of liver, cancer, and chronic ulcer. Usually the acute ulcer appears suddenly in a person previously in normal good health. The treatment consists of absolute physical rest, rectal alimentation for three or four weeks, and an ice-bag over the stomach. Ergotin hypodermically, and intravenous injections of serum should be used. Dieulafoy's serum is 8 gm. chloride of sodium and 10 cgm. nitrobenzoate of caffeine in one liter of water. Hayem uses 5 gm. of chloride of sodium and 10 gm. of sulphate of sodium to one liter of water. Preparation for operation should be made and if the loss of blood continues the stomach should be opened and the ulcer carefully sought for and stitched up.

Dysbasia Intermittens Angiosclerotica.—This condition, which is an intermittent lameness of vascular origin, is very rare and was first described by Charcot in 1854. It occurs usually in persons past middle life. They are seized after walking a short distance, occupying perhaps five to ten minutes of time, with a helpless, cramp-like feeling in the legs, so severe as to render further progress impossible, though after a few moments' rest they can do their short stint again. While the patients are at rest and during the first few moments of exertion there is no trouble. Examination between seizures shows that one or more of the pedal arteries and even the popliteals are without pulsation, and as a result the foot may be cool and slightly pale, or red, or blue, according to circumstances. The arms are never affected. The cause of this condition has been variously conjectured, but nothing is positively shown. The disease is chronic and does not tend to recovery. Sometimes an improvement is brought about by such means as iodide of potash, moderate warmth, prolonged galvanism with the feet resting in tubs of warm water, cardiac tonics, and studious avoidance of exciting causes. JAMES J. PUTNAM (*Boston Med. and Surg. Jour.*, Feb. 21, 1901) reports a case of this rare condition in a man, seventy years of age, with a remarkably good history and physical condition. He had had one attack of dizziness in which he was precipitated from his chair to the floor. This may have been due to a cerebral lesion of arterial origin. For two months an intense sense of muscular fatigue in the legs, amounting almost to pain, recurred every time the patient walked more than one-eighth of a mile. This quickly disappeared on resting. The pain usually appeared first in the left calf, then in the right, and then extended upward to the thighs and hips, the knees not being affected. He then feels that he must stop, and that if he went on his joints would grow rigid and he could not move. On awakening in the morning or after a rest he feels perfectly well. He is not neurasthenic and mental work causes no fatigue. The calf of the left leg was found slightly cooler than the right and perhaps a little less firm. The left knee-jerk was slightly less than the right. The toes of the left foot could not be flexed dorsal quite so far as those of the right. Other movements were normal. The galvanic reaction of the left peroneal nerve was slightly less than that of the right. Only two of the pedal arteries could be felt to beat and one of these could be scarcely felt. Treatment carried out, as indicated above, brought about no change. Finally, the patient undertook to give himself a kneading of the calves morning and night, and soon he began to improve. He has continued this treatment and can now walk one or two miles without much difficulty. The writer is inclined to think that the best explanation of the condition is that it is a vascular spasm.

THERAPEUTIC HINTS.

Ichthyol Ointment.—W. T. SLEVIN (*N. Y. Med. Jour.*, Mch. 9, 1901) recommends the following for both superficial and deep inflammations:

℞	Ichthyol	gm. 3.0	(gr. xlv)
	Plumb. iodid.	3.0	(gr. xlv)
	Ammon. chlorid. ...	0.7	(gr. x)
	Petroleum, q. s. ad...	30.0	(℥i)

Vaginitis.—Use warm injections of a tablespoonful of the following in one liter (one quart) of water:

℞	Resorcin	20	parts.
	Ac. salicyl.....	2	"
	Cupri sulphat.....		
	Betanaphthol	0.25	"
	Aquam ad.....	1000	"

Apply tampons impregnated with

℞	Salol .....gm.	3.0-8.0	(gr. xlv-℥ii)
	Neutral glycerin..gm.	250.-0	(℥viii)

And insert a suppository of

℞	Acetanilid .....gm.	1.0	(gr. xv)
	Ac. tannic	0.50	(gr. viii)
	Ext. hyoscyam.....	0.25	(gr. iv)
	Sacchar lactis	10.0	(℥vi)

—*Jour. de méd. de Paris*, Feb. 17, 1901.

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OF MEDICAL SCIENCE.

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SATURDAY, MARCH 16, 1901.

THE MEDICAL PROFESSION AND THE SOCIAL EVIL.

THERE are now only two contagious diseases that are not submitted to the regulation of municipal and State boards of health. Needless to say these are the venereal diseases. Of gonorrhea, Professor Neisser of Breslau, the discoverer of the gonococcus, said in the article on the subject which he read before the International Conference on Venereal Diseases at Brussels and which was contributed by him to the MEDICAL NEWS for January, 1900, that it is the most contagious of diseases except measles. Syphilis is known to be very violently contagious. Passing exposure to the active agent of the disease may produce it. It was not difficult over ten years ago for an American syphilographer to find in medical literature 20,000 cases of innocent syphilis. Most of these were due to accidental contamination.

The watchword of present-day medicine is the prevention of disease and especially of contagious disease. When two of the most important contagious diseases are left absolutely uncared for things are just as they should not be. No reason can justify inaction in the face of the dangers from these intensely communicable diseases. At the Brussels Conference the agreement of delegates gathered from all over the world was that at the present time the attempt to enforce police regulations of prostitution is inadvisable. Americans who have seen something of the inner workings of so-called police regulation in Paris, Vienna and Berlin, have very little confidence in the system as applied. There is an open acknowledgment of the necessity for evil that is distinctly lowering in its ethical tendency. The cooperation of medical men in the system gives a sense of security against venereal contagion that is not justified by the work done nor its results. Finally the increase of clandestine prostitution, despite the enforcement of police regulations, has shown that an effective registration and medical examination system is under present living conditions in our large cities a practical impossibility.

The Brussels Conference did offer one promisingly helpful suggestion as the result of its deliberations. It was that proper means should be taken for a more widespread dissemination of up-to-date knowledge with regard to venereal diseases. Our views as to the significance of venereal diseases have been completely revolutionized in these last twenty years. Gonorrhea is no longer thought of as a simple inflammation of mucous membrane, resembling a cold in the head and not apt to be any more harmful in its results. This mildest of the venereal diseases may invade any of the serous membranes of the body. The arthritis it sets up may cause ankylosis and permanent deformity. It may give rise to fatal peritonitis, or to crippling and at times mortal endocarditis or pericarditis. Its curability is one of the most uncertain things in medicine. It has been known to continue and prove infective fifteen years after the orignal acquirement although for many years it had been giving practically no symptoms. Such good conservative authorities as Professor Finger of Vienna and Professor Jullien of Paris, men of very large experience, absolutely forbid marriage for two years after an attack of gonorrhea.

So much for the milder venereal disease. Syphilis has always been a subject of very proper solicitude, but even its significance for evil has widened very much during the last quarter of a century. The direct effects of the disease upon the nervous system were scarcely more than suspected a few years ago. Now, they occupy a large place in pathology and the indirect effects of syphilis, the so-called parasyphilitic affections,

have become the most important part of neurology and syphiloiogy. Practically all the apoplexies in patients under forty-five years of age are of syphilitic origin. Tabes, with its excruciating pain, its hopeless blindness, its crippling incoordination in the midst of torturing undisturbed mentality, is connected etiologically with syphilis in at least 70 per cent. of the cases.

The great mental disease of the century, general paralysis of the insane, is so closely connected with syphilis that there are good authorities who doubt if it ever occurs except in a patient with a syphilitic history. At the beginning of the century paresis was almost unknown. As the result of what Krafft-Ebing has strikingly called syphilization and civilization, the disease has become one of the most important in our modern insane asylums. Over 30 per cent. of the inmates of asylums on the Continent are general paretics. In England the proportion is scarcely less. In this country the average is well up to 20 per cent. of all the insane.

These are the facts in the matter of venereal diseases that have been acquired by recent medical investigations and observations. Although the general public is intensely interested in the subject, people have scarcely an inkling of these new points of medical knowledge. What must be begun at the present time is not a new vice-crusade, but an education crusade. Nothing is eventually more harmful to the cause of good morals than the spasmodic attacks of overzealous virtue, that attempts to reform the world all at once. Vice-crusades do more harm than good. If people can be impressed with the physical dangers inevitably associated with vice, then a public opinion will be created that will allow the enforcement of proper and systematic repressive regulations. At the present time legal regulation would soon resolve itself into nothing more than a new and powerful method of persecution and blackmail.

We must get beyond the mistaken notion that ignorance is innocence and that the subject of venereal disease must be tabooed. Our young men particularly must be given definite ideas as to the present position of medical thought in relation to the venereal diseases.

The German University method, by which lectures on the subject are delivered, not alone in the medical department, but to all the students of the University, is an excellent one. If in addition such lectures could be given at young men's clubs, great good would be accomplished and none of the harm that puritanic feeling imagines would result.

Here is the present duty of the medical profession for the prophylaxis of venereal diseases: Educate the people to right ideas. Just as education with regard to other contagious diseases has, not without delay and difficulty, produced a public opinion that now favors the enforcement of sanitary measures, even though individuals must suffer as a consequence, so, too, a public sentiment will be gradually raised up that will help and not hinder in the work of the elimination of the physical evils of venereal disease.

PATHOGENIC MICROBES IN MILK.

A TENDENCY to the development of better dairy sanitation has been shown by the appearance of a number of articles during the last three or four years on the relations of milk to the spread of disease. Although belief in such a relationship is by no means new, the scientific consideration of the subject can hardly be said to have begun more than a dozen years ago. When one considers the important position which this article of human food occupies, especially in connection with the young in whom milk constitutes the chief nutriment, the need of investigation assumes clearer significance. In New York City alone it has been estimated that considerably more than seven million gallons of milk are consumed in a year. And, now that it has been incontestably established that milk may serve in the spread of disease-inciting micro-organisms, newer and more protecting measures should be enforced to ensure narrower limitation of this occurrence.

Milk as it exists in the udder of a healthy cow is practically germ-free, but it is a matter of common experience that all milk, however carefully it may be collected, however clean and aseptic may be the vessels into which it is received, will on standing, or after being submitted to the influences which are ordinarily at work between the time of collection and distribution, be found to teem with bacteria often of many kinds. For the most part, fortunately enough in this, the micro-organisms found are largely saprophytes. Of these, bacilli of the so-called colon and proteus groups are apparently the most common contaminations. It is to the rapid multiplication of one or the other of these that milk "goes bad." However normal in appearance, taste and chemical analysis, the milk as commonly distributed to consumers may contain hundreds of thousands of

bacteria per cubic millimeter. By their numbers and by their products of metabolism the common saprophytic species alone have often been shown to induce disease, especially in that fragile organism, the infant.

If the latter is true of milk containing, what has incorrectly been said to be, a normal flora, the gravity of the whole question is then further emphasized by the observations of various investigators who have repeatedly found pathogenic microbes in milk, such as is usually distributed for consumption. Among the diseases about which there is evidence showing that the exciting factor was transmitted through milk may be mentioned tuberculosis, scarlet and typhoid fevers, diphtheria, cholera, anthrax and several others.

The statements of various observers as to the frequency of the tubercle bacillus in milk are often divergent; thus the percentages given vary from 14 to over 60 per cent. Whilst Obermuller found that 61 per cent. of the Berlin milk tested contained tubercle bacilli, later investigations show that the percentage is usually considerably lower. Rabinowitsch and Klemperer (*Ztsch. f. Hygiene*, 1899, p. 137) more recently found only 28 per cent. of their samples of the Berlin milk to be similarly contaminated. In Liverpool and Manchester, in England, tubercle bacilli were found only in 2.8 per cent. in samples collected in the first-named city, and in 5.55 per cent. in those of the last-named city (*Lancet*, Jan. 20, 1900). On the other hand, milk collected from 16 Cambridgeshire dairies by Kanthack and Sladen contained them in over 56 per cent. of the samples (*Lancet*, Jan. 14, 1899). Just recently, Klein (*Journal of Hygiene*, Jan., 1901) demonstrated tubercle bacilli in 7 per cent. of the samples of "country milk" examined.

In almost all of these investigations the milk probably was obtained from cows with udder tuberculosis; for the experimental researches of the Royal Commission on Tuberculosis tend to show that the udder must be tuberculous before the milk becomes infectious.

There is one extremely interesting point in connection with the results of comparative tests of the sediment and cream of the same samples of milk; Kanthack and Sladen found that the cream was ordinarily considerably more infective than the sediment. An explanation of this is probably found in the studies of Freeman (*Arch. of Pedriatrics*, 1899), who found that as the cream rises to the surface it carries with it more than 90 per cent. of the contained bacteria, leaving the milk relatively free from micro-organisms.

In the case of typhoid fever and scarlet fever the demonstration of the relationship of milk to disease is largely based on circumstantial evidence; as yet bacterial proofs are still wanting. Notwithstanding, the proofs are convincing enough, as any one will find who takes the trouble to go over carefully the facts relating to various epidemics for which the milk has been held responsible. As far as diphtheria is concerned the evidence is complete; diphtheria bacilli have been found in milk. Thus Klein found this organism once in 100 specimens taken at random. That cholera may be spread by milk we have every reason to believe. Gaffky, who has written on cholera in Egypt and India, states that it is not infrequently a means of dissemination. An epidemic of cholera on ship-board reported by Simpson in 1887 is conclusive in this respect.

Fortunately, through the stimulating influence and energy of a small group of scientific investigations of milk in its hygienic applications, some of the larger dairies of the country have already taken important steps toward the realization of a safe and clean milk; those who have not yet taken precautions to safeguard the public health in this connection should be compelled to do so to the fullest measure by adequate laws.

THE TESTIMONY OF THE INSANE.

IT is a part of newspaper effect to collect the opinions of eminent men on a certain subject and set them side by side for the public to compare. The recent discussions on the value of the testimony of insane patients, in criminal or civil suits, apropos of the trial of the Bellevue nurse, Davis, for manslaughter, have elicited a very interesting conflict of sentiment between physicians and lawyers.

It is instructive to note that the doctors agree. Several well-known alienists state that they consider it unwise to admit the testimony of any insane person. The lawyers, however, quoting precedent, hold that a witness need not be excluded from giving testimony because he is insane on some one subject. The case that established this precedent occurred just half a century ago. It was very similar to the one now under discussion. The man who was killed and the witness were both lunatic patients, in an asylum, and both slept in the same ward. The testimony

of the lunatic was accepted. The ruling of the Supreme Court of the United States in 1882, in a case where an insane man gave testimony, was that though a lunatic might seldom be a competent witness, yet the existence of partial insanity would not prevent him from giving accurate and lucid statements of what he had seen and heard; and that if he was capable of understanding the nature of an oath, and of giving a correct account of things he had witnessed, his testimony might be accepted. The question of the competency or incompetency of the individual was, in the matter of insanity, to be left, like incompetency, for any other cause, to the judgment of the court.

The real question now before the alienist and lawyer of to-day is whether the precedents of fifty and nineteen years ago shall stand in the face of the revelation of modern science. The whole theory of insanity has been revolutionized during the last twenty-five years. The idea used to hold that a man might be insane in one respect only, but absolute, sound in every other matter, as a man who had lost one finger from a hand, might be perfectly strong and skilful with the others. But modern neurology has taught us that faculties are not lopped off like fingers; but that any sign of mental failing is a sign of general mental disease, which affects the whole mental attitude of the patient in the form of warped judgment.

An insane man may have correct perceptions of outward events, but his description of these cannot be relied on, because, by reason of his disease, he distorts the outer world into a phantasmagoria, harmonizing with his own morbid mood. Careful observations have endowed the experienced alienist with an insight into the mental conditions of the insane, so that he is able to detect a hundred vagaries allied to the apparent delusion of the individual, where the casual observer would see but one. Were such an experienced alienist always at the command of the court to say, without party bias or political intrigue whether or not a certain testimony might be accepted as trustworthy, it would be possible to permit the exception to the rule of excluding insane witnesses.

But as the members of the court would be quite unable to pass such judgment, owing to their lack of knowledge, we feel that our legal brethren should accept the combined warnings of the alienists, and never permit an insane person to act as a witness.

The fact that in the present case under discussion, one witness, was a paranoiac, is enough to make the idea of his acting as a witness impossible. But perhaps the members of the legal profession who know their precedent so well, do not realize that a paranoiac's ideas of his relation to his fellowmen are wholly distorted, that he is always abused, and has a perpetual "grouch" that is open to any one's suggestion. The other witness in the case was a patient with general paresis, which for the lawyer's benefit should be translated general decay.

If the court casts out the testimony of those whose moral character and past reputation shows them guilty of wilful misrepresentation, it should be equally chary of accepting testimony from those whose mental characteristics have proved them incapable of perceiving facts as they are.

THE CITY OF ORANGE AND ITS SMALLPOX HOSPITAL.

WE hope that the bomerang of ignorance will not fly back at the citizens of Orange who have so foolishly demolished the temporary smallpox hospital that was put up for the care of patients who are now lying ill in a densely crowded part of the town.

Burning was the method that these enterprising citizens decided on as a means of abolishing the nuisance, but the Health Board, under whose care the hospital was being erected, stopped this enterprise and had the building patroled. But a mob armed with axes, spikes and crow-bars, in true revolutionary fashion, proved too much for the guards and succeeded in the work of demolition:

In the meantime the number of cases of smallpox is in danger of increasing. The crowded quarters of the tenement districts in which they are most numerous may have to be quarantined and these enterprising citizens may find themselves in closer contact with the disease than they would relish. The obstinacy of ignorance and the density of the fool alike furnish food for reflection.

ECHOES AND NEWS.

NEW YORK.

Bellevue Maternity Hospital.—The Medical College and Dispensary building of the Bellevue Hospital group will be altered from plans by Horgan & Slattery into a maternity hospital dispensary and dormitory. The changes,

which will be to the interior of the building, have been estimated to cost $20,000.

Gift to the Academy of Medicine.—The Academy of Medicine will get the medical library of the late Dr. Abbott Hodgman by his will, filed for probate last week.

Hospital Nurses' Home.—Plans were filed at the Building Department last week for the new nurses' home, to be erected for the Presbyterian Hospital at 31 to 37 East Seventy-first Street, opposite the hospital buildings. The structure, which has been designed by Architect James B. Baker, will be eight stories in height, and will occupy a plot 124 by 102 feet. Several months ago a benefactor, whose name was not disclosed, gave the hospital $300,000 for the erection of this home, provided the institution would assume the maintenance of it. Alexander Maitland, Secretary of the Board of Trustees of the hospital, said yesterday that the erection of the home would be a two-fold benefit. It would afford adequate living apartments for the nurses and give additional space in the buildings now given up to the medical and surgical wards, the top floors of which structures have heretofore been occupied by the nurses. According to the last annual report of the hospital, its corps of nurses numbers eighty-five.

How One Doctor Does It.—The persistence of a New York physician in his efforts to build up his practice might cause the County Medical Society to drop him if he happened to be a member and a case could be made out against him, says the *Sun*. He does not advertise. He writes letters. For instance, W. T. Smith, of 1213 West Twenty-third street, will find in his mail a letter addressed to W. W. Smith at his address. It is from this physician. In this letter he thanks W. W. Smith for his appreciation of the physician's skill and then outlines his case. The complaint described is usually one of the common ailments like rheumatism or dyspepsia or lung trouble. The doctor tells W. W. Smith that he has discovered an absolute cure for this disease and that his success in the Smith case was due to that. He concludes by asking W. W. Smith to come in and see him within a month that he may be sure his case is cured. W. T. Smith, who reads the letter, assumes that it was sent to him by mistake. If he happens to have symptoms like those described as W. W. Smith's and if he is as credulous of sure cure as most people are, he may call on the physician for treatment. There is no way to prove that the physician purposely misdirects these letters. He has been engaged in this sort of business for at least two years, however, and although these fake letters would seem to be forlorn hopes, they evidently bring results or he would discontinue them.

Appointment of St. Luke's Graduate.—Jonathan M. Wainwright, M.D., formerly house surgeon at St. Luke's Hospital, New York, has been appointed Surgeon-in-Chief to the Moses Taylor Hospital at Scranton, Pa.

Railway Surgery.—A joint session of the Section on Railway Surgery, with the Medico-Legal Society of New York, will be held on Monday, April 15, 1901, in New York City, under the chairmanship of Dr. Charles K. Cole, of Helena, Mont.

Prevalence of Grip.—The State Board of Health has issued a statement relative to the prevalence of grip in this State. The disease made its appearance in 1889. Every year since in the winter season it has recurred, the annual epidemic having various characteristics. The number of deaths which occurred each year from the disease is as follows: 1890, 5,000; 1891, 8,000; 1892, 8,000; 1893, 6,000; 1894, 3,000; 1895, 5,000; 1896, 2,750; 1897, 3,000; 1898, 2,500; 1899, 7,000, and 1900, 11,500. The statement says: "Of the distribution of the disease, it has not been found to be one of either the city or the country. It is a disease of the colder months. It has varied greatly in severity in different years; it seems likewise to have varied greatly in virulence in different localities and shown varying types. It likewise varies in rapidity of spread. It is evidently communicable from the individual directly and conveyable in infected clothing. Like all zymotic diseases, susceptibility to it varies; unlike some, immunity does not follow a previous attack. The State is now in the course of the twelfth recurrence of grip. Affecting the mortality of December by about 500, it has increased the numbers of deaths in January by probably 3,000, and was still in progress during February."

New York's Hospital for Insane and Narcomanias.—Assemblyman Henry last week introduced a bill providing for the establishment of a hospital in New York City for the special treatment of acute nervous and mental diseases. The city is to appropriate $250,000 for the maintenance of the hospital and the building is to cost $300,000. The board of managers is to consist of twelve members, six of whom are to be practising physicians. The physicians appointed as managers are to be the consulting and attending physicians of the hospital and shall have the care and treatment of all patients. A superintendent is to be appointed at a salary not exceeding $10,000. He is to be a physician of more than six years' experience and recognized as a specialist in neurology and psychiatry. He is to employ such attendants and nurses as he deems necessary. The object of the hospital is to prevent the removal of patients suffering from mental disorders to Bellevue, and all persons suffering from acute nervousness and mental diseases, who are residents of New York City, are to be received at this institution and detained there for a period not exceeding ten

days. Magistrates may commit persons to the hospital who appear nervously or mentally deranged until their normal condition may be ascertained. Persons whose sanity is in doubt can be confined there pending the determination of their mental condition. This is to prevent them being railroaded to an insane asylum. All cases of alcoholism, narcomania or habit neurosis may be committed to the new institution. The board of managers is empowered to dismiss patients committed to the hospital.

New York Skin and Cancer Hospital.—The New York Institute of Stomatology invites the profession to a special clinical lecture upon syphilis of the mouth and throat, to be given in the Hospital on Thursday, March 28th, at 4:15 P.M., by D. Bryson Delavan, M.D.

New York Academy of Medicine.—At the regular meeting to be held Thursday, March 21st, there will be held a symposium on the Present Treatment of Gonorrhea and Its Complications and Sequelæ." The following papers will be presented: (1) Acute Gonorrhea, by Dr. G. K. Swinburne; (2) Chronic Gonorrhea, by Dr. John Van der Poel; (3) The Complications of the Anterior Urethra, by Dr. M. I. Echeverria; (4) The Complications of the Posterior Urethra, by Dr. J. Pedersen; (5) Gonorrheal Conjunctivitis, by Dr. W. A. Holden; (6) Gonorrheal Strictures, by Dr. I. R. Hayden. Discussions by Drs. R. W. Taylor, Guiteras, Bierhoff, Lapowski, Fuller, Hill, Gibson, Chetwood and others.

PHILADELPHIA.

University of Pennsylvania Medical Bulletin.—We note that the change in the *University Medical Magazine*, which were announced in February, appear with the March issue. The title has been changed to read *University of Pennsylvania Medical Bulletin.* The reading matter is printed in double instead of single column, and advertising matter has been excluded. The policy and scope of the publication are in no way affected by these changes as it still continues to be the official organ of the Medical Department of the University of Pennsylvania. In its present form the publication is both attractive and dignified in appearance.

Increase in Typhoid Fever.—During the week ending March 9, 86 cases of typhoid fever were reported, against 18 for the preceding week. No cause for this increase, other that the low condition of the Schuylkill River, due to drought throughout the valley, is apparent. The report of the Bureau of Health for 1900, states that bacterial examination of milk taken from typhoid-infected houses failed in every instance to show the presence of typhoid bacilli.

Obituary.—Dr. Emil Schnizler died at his home in this city, March 6, of pneumonia. Dr. Schnizler was born in Germany sixty years ago, received his medical education at Heidelberg University, and was for fifteen years connected with the Vienna Hospital. While there he made special studies regarding the nature of rheumatism. Since coming to this city, twelve years ago, he had made a specialty of rheumatism, gout and neuralgic manifestations.

Streptococcus in Gynecology.—Dr. Guy L. Hunner, of Johns Hopkins Hospital, addressed the Obstetrical Society on the above subject March 7th. Mistakes in diagnosing this infection are considered inexcusable. The history of the case, in nearly every instance the infection following confinement, is of the greatest value in diagnosis. Localized abscesses should be opened through the vagina or by an inguinal incision, every effort being made to avoid opening the peritoneal cavity. Antistreptococcic serum has been used at Johns Hopkins, but is not considered of much value.

Libraries and Contagious Diseases.—The Board of Health at the last monthly meeting took the following action toward preventing the spread of contagious diseases: *"Resolved,* That the assistant medical inspectors be directed to obtain a list of the several public libraries in their respective districts and to furnish the Board of Health with a list of the same, and that the several libraries be furnished daily a list of cases of contagious diseases in order that books may be refused such houses in which contagious diseases exist."

Surgical Shock and Collapse.—Dr. Geo. W. Crile, of Cleveland, Ohio, by invitation read a paper on "Experimental Research into Surgical Shock and Collapse" before the College of Physicians March 6th. The reports of experiments on 250 animals, mostly dogs, were given. The animals were reduced to surgical anesthesia and killed before consciousness was regained. The effects on blood-pressure and respiration by cutting, crushing, or burning the various tissues of the body were ascertained. Traumatism on bone, cartilage, tendons, and fascia produced but little effect. Wounding of the nerve-trunks of the somatic area produced very marked effects, there being an immediate rise in blood-pressure. In amputations and disarticulations the principal change was caused by the division of skin, muscles, and nerves, and but little when the bone was sawn, or the joint opened. This result is contrary to old beliefs. Cutting or crushing the tongue had but slight effect. Drawing it forcibly forward and to one side sometimes caused total inhibition of the heart or respiration. This has an important bearing on the swabbing of the throat and consequent pulling out of the tongue by vigorous anesthetizers. Foreign bodies thrust in the pharynx and larynx caused marked inhibition and collapse in some instances. Positive in-

flation of the lungs may stop the circulation. Operations on the genitals showed opposite results in the sexes, a marked fall of blood-pressure being caused by crushing the testicles while in the case of the ovaries a rise was always produced. Experiments with blows on the pit of the stomach showed that no amount of manipulation of the solar plexus could cause collapse, the result in such cases being due to the effect on the heart. The conclusion reached was that shock is due primarily to impairment of the vasomotor nervous system as there can be no shock unless there be low blood-pressure. No fall in blood-pressure is caused by hemorrhage up to a certain point, but there is a diminished stock of reserve power and as a consequence shock comes on more easily after hemorrhage. After abdominal operations the continuance of shock depends on the amount of raw surfaces left, the tension of stitches, presence of blood-clots, etc. These factors help determine why one operator's patients recover more rapidly than do those of another. The statement was made that in cases of quick drowning death was caused by blocking of the circulation instead of by asphyxia.

Milk Inspection Inadequate.—The laws regulating the inspection of milk in Philadelphia and other cities of the State met with severe criticism from the members of the Pennsylvania State Veterinary Medical Association, which held its annual meeting here during the past week. Considerable time was devoted to the consideration of the inspection of milk and meat. Dr. Jacob Helmer of Scranton read a paper on "The Problem of Municipal Milk Inspection" in which he stated that the laws of Pennsylvania are markedly inadequate to the needs of the people. State legislation practically gives no authority to Boards of Health and Councils further than the appointment of an inspector to manipulate and analyze samples of milk. Competent inspection must include not only this, but the inspection of every cow of every dairy and the careful study and enforcement of dairy sanitation.

CHICAGO.

Medical College Gift.—The sum of $1,000,000 has been given to the Dunham Medical College by John E. Du Bois of Du Bois, Pa. The gift, so the officials of Dunham College assert, comes as an unsolicited testimonial for the benefits which his wife received recently in treatment by members of the faculty last fall. Mr. Du Bois is a multi-millionaire lumberman and mine owner. According to the announcement made to-day he makes this gift without any reservation, simply declaring that the money is at the disposal of the college authorities as soon as they have laid their plans for its disposition.

The Demands of Sanitary Science.—At a meeting of the Chicago Medical Society, held March 6th, Dr. H. M. Bracken, of St.Paul, Secretary of the Minnesota State Board of Health, read a paper on this subject, in which he discussed at considerable length the suppression of nuisances. A nuisance was defined as some feature objectionable to the sense of sight, smell or hearing, or a menace to health. The disposal of refuse taxes the ability of the sanitarian according to the varying conditions present in large and small cities. Refuse includes street-sweepings, various cast-off articles of clothing or factory, kitchen garbage, manure, dead animals, ashes, etc. Kitchen garbage has a food value in the feeding of hogs and any city with a population not exceeding 300,000, and surrounded by an open country, should find but little if any trouble in disposing of such material at comparatively little expense. It may be necessary under certain conditions to dispose of it by means of cremation, but this, as a rule, is a wasteful method and expensive, and is to be avoided when possible.

School Inspection and Infectious Diseases.—As to the control of the spread of infectious diseases, probably there is nothing that will accomplish more than a thorough system of school inspection. School inspection does not cover the entire problem of proper sanitation for schools, for the proper ventilation, heating, and lighting of school buildings, together with an insistence upon the individual cleanliness of pupils, places a great responsibility upon architects which too often is not recognized.

State Aid in the Prevention of Tuberculosis.—Dr. Charles O. Probst, Secretary of the State Board of Health of Ohio, read a paper with this title. He presented an argument in favor of the following propositions: (1) The State should provide hospitals for the reception of persons suffering from tuberculosis, and should assist municipalities or counties to construct similar institutions. (2) Physical education, conducted by trained medical men, should be made a part of the common-school course; and students in normal schools, colleges and universities should be instructed in hygiene, including a proper knowledge of the causes and prevention of tuberculosis. (3) The State should exercise a much closer supervision over the construction, ventilation and care of workshops and factories, especially where the occupation is conducive to tuberculosis. (4) The State should prohibit the sale of milk from tuberculous animals, and should provide for the inspection of dairy cattle. It should enforce the proper stabling and care of such animals. The essayist urged the erection of a hospital for consumptives by the State for the treatment of carefully selected cases. It would seem to be wise, at least in the beginning, that the patients should pay the greater part of the operating expenses. The charge of

$5.00 a week, established for the new Massachusetts hospital, appears to be a reasonable one. Hospitals more strictly for the prevention of tuberculosis should be established by municipalities, or possibly by counties. The aim here should be to select and isolate those cases which are the greatest danger to the public. Such cases are usually found among the unfortunate, poorest classes. Many of these find their way into general hospitals or have to be treated in their homes at public expense. He urged the physical education of school children, with the teaching of hygiene and the cause and prevention of consumption to students in advanced institutions of learning.

Miscarriage of Municipal Sanitation.—A paper with this title was read by Dr. Ernest Wende, Health Commissioner of Buffalo. The following is a summary of his paper: There should be (1) unity of law, procedure and action throughout the State in regard to contagious diseases, even further in this relation, throughout the States, interstate contagious disease laws. (2) Interstate law covering contagious diseases in animals, particularly tuberculosis. There seems every reason for believing that the pathology of the superior animal —man—would be benefited by such legislation. (3) The vesting of city health officials with certain State Board of Health inspection powers, to permit them, under certain circumstances, to extend their action beyond the municipal confines. (4) Municipal sanitation and State medicine to be made a more important feature in education, particularly in universities. It should be made contingent that health officers qualify by such course of study before being eligible. (5) Requirements of sanitary education everywhere; in the public schools, in the high schools, colleges and universities, so that by the time the younger generations mature, enlightenment will have reached our various legislative bodies. (6) Selection of municipal health officers for their fitness, with secure tenure of office, and proper compensation. The municipality should not be exposed to an unnecessary risk by politics.

Bill Amending Inheritance Tax Law.—Senator Bussey has introduced a bill amending the inheritance tax law by providing that when beneficial interest passes to a hospital or other charitable institution, it shall not be subject to tax, but that the exemption shall not apply to institutions which are operated for the profit of its owners.

Appointment of Dr. Schaefer.—Dr. Frederick C. Schaefer has been appointed gynecologist to St. Elizabeth's Hospital and Surgeon-in-Chief to St. Hedwig's Hospital.

GENERAL.

Iowa State University Loss.—With wind blowing at the rate of fifty miles an hour, fire broke out March 11th in the Medical Building of the State University, and forty minutes later it was a mass of ruins. South Building, one of the oldest in the State, caught fire later, and is also a total loss. There is no insurance, and the loss will reach upwards of $250,000.

Grave of Hippocrates Found.—A despatch to the London *Chronicle* from Vienna states on the authority of a telegram from Athens that the grave of Hippocrates was discovered during excavations at Larissa. A royal commission was immediately sent to verify the report.

Medical Library for the Oranges.—The medical and surgical library of the late Dr. William Pierson, of Orange, numbering 2,000 volumes, has been presented by Mrs. Pierson to the physicians of the Oranges and they have decided to organize the William Pierson Medical Library Association. Ultimately, it is expected, this will result in an Orange academy of medicine, with a building for the library, rooms for meetings of the local medical societies, lecture halls and probably courses of instruction on medical topics. For the present the library will be placed in the Stickler Memorial Library. The Stickler Library is now building as a memorial to the late Dr. Joseph William Stickler and his extensive medical library is also to be placed in the building. Physicians have named a committee to prepare a plan of organization which will be adopted at a meeting to be held soon.

University of Michigan.—Mrs. Love M. Palmer, widow of Dr. A. B. Palmer, who was Professor in the Medical Department of the University of Michigan from 1852 up to the time of his death, fifteen years ago, died March 9th. By the terms of her will, she leaves $85,000 to the University. It is understood that $20,000 will go to build a new ward for the hospital, and $15,000 to maintain free beds in that institution.

Monument to Dr. Ollier.—The undersigned constitute a Committee similar to those formed in several European countries for the purpose of receiving subscriptions for a monument commemorative of the distinguished scientific services of Professor Leopold Ollier. Among the members of these Committees are Lord Lister, Professors von Bergmann, Czerny, Durante and other leading men. The municipality of the city of Lyons has dedicated an open space adjacent to quarters of the various academic faculties on the border of the Rhône named in is honor "Place Leopold Ollier." The profession of this country is well aware of the great services rendered by Professor Ollier, especially in the domain of plastic and osseous surgery. His labors have been most fruitful in the domains of surgery, of physiology and of pathology. The committee hopes to raise not less than one thousand ($1,000) as a testimonial from the profession of America. Checks should be forwarded to W. W. Keen, M.D., 1729 Chestnut St., Phila-

delphia, Pa., and at as early a date as possible. *Committee:* ROBERT ABBE, New York; WILLIAM T. BULL, New York; P. S. CONNER, Cincinnati; A. T. CABOT, Boston; HOWARD A. KELLY, Baltimore; W. W. KEEN, Philadelphia; RUDOLPH MATAS, New Orleans; WM. J. MAYO, Rochester; W. F. MCNUTT, San Francisco; ROSWELL PARK, Buffalo; CLAYTON PARKHILL, Denver; MAURICE H. RICHARDSON, Boston; NICHOLAS SENN, Chicago.

Obituary.—Dr. William Dexter Anderson, a well-known physician of New Haven, died last week as the result of an operation for intestinal trouble. He was born in Londonderry, N. H., sixty years ago, and was graduated from the Yale academic department in 1862, and from the Yale medical school in 1865. He was a musical composer of some note in his early days, but never had any of his works published.

King of England's Appointments.—King Edward VII. has appointed Lord Lister to be Sergeant-Surgeon in Ordinary and Sir William MacCormac and Sir Thomas Smith to be Honorary-Sergeant-Surgeons. Honorary Physicians to the King, Dugal McEwen, M.D.; Sir James Dennet, Inspector-General of Hospitals and Fleets; Sir John Watt Reid, Director-General of the Medical Department of the Navy (retired); Adam B. Messer, M.D., Inspector of Hospitals and Fleets; Henry C. Woods, M.D., Inspector-General of Hospitals and Fleets (extra). Honorary Surgeons to the King: Sir James Jenkins, Inspector-General of Hospitals and Fleets; Timotheus J. Haran, Inspector-General of Hospitals and Fleets; Sir James N. Dick, Director-General of the Medical Department of the Navy; William H. Lloyd, Inspector General of Hospitals and Fleets; Alfred G. Delmage, Deputy Inspector-General of Hospitals and Fleets.

Anniversary of Dr. Hansen.—Dr. G. A. Hansen, the discoverer of the lepra bacillus, well celebrate his sixtieth birthday, July 29, 1901. It is proposed to erect to him a marble-bust in the Bergen Hospital (Lungengaard) where he has worked so many years and in whose laboratory the life history of the bacillus was worked out.

CORRESPONDENCE.

THE OPIUM HABIT.

To the Editor of the MEDICAL NEWS:

DEAR SIR: I have never lived in India, like Kipling, nor in China, like Dr. Wm. Hector Park of McMeekin, Fla., but, as a resident of New York and as a close observer for a quarter of a century of the opium addiction as practised in all its forms by the lowest type of Mongolian as well as the highest physical and intellectual type of the Caucasian, I can affirm that, no matter where the question may be studied, it is one that should be based on personal, practical knowledge. One should look into the matter with a full appreciation of all its phases, good, bad and indifferent, as they may be.

It is more apt to prove satisfactory in dealing with a sociological problem to begin by understanding one's own place in one's most natural environment before studying a foreign being in his habitat, viewed by prejudiced eyes. A question of toxic drug-action is one that can be studied as well in civilized communities, among English-speaking, or intelligent races, as by trying to observe this phenomenon upon utterly alien peoples in their own peculiar and unfamiliar environment.

It sums itself up in the fact that to really understand the question of the opium habit in either its sociological, economic, ethical or medical aspects, it is not necessary to go to India, China, Japan or even to San Francisco. Right here in New York City one can see and study all the phases of the subject and New York presents, it would seem to me, on account of its cosmopolitan population, as fertile a field for investigation of this interesting subject as India or China, especially as it does not present sociological difficulties of language and many other features that would handicap one in becoming personally acquainted and in touch with the subject.

New York undoubtedly contains thousands of opium habitués, varying widely in the peculiar form in which they take the drug. The Mongolians, for the most part, seem to be habitués of the pipe, and they are to a great extent *limited* smokers, confining themselves to a minimum amount of the drug and using it much as the holiday drinker of alcohol. It is the Chinaman's "off-day" pleasure, a sort of Saturday and Sunday recreation. He seems very moderate in his requirements and nothing is ever thought of this moderation as but the usual thing, emanating from the customs of his country. The Chinaman of New York is an industrious, hard-working man, and the few glaring exceptions of the opium fiend in all its horrors do not apply to his class, unless it be in the sick or the exceptionally "bad" Chinaman.

My experience has taught me that the majority of the pipe-smokers among the Chinese are limited smokers and are absolutely unharmed by their practice.

In the case of the white race it is different, but only to a slight degree. All who seem to become absolute slaves to the various opium addictions are, as a rule, of a peculiar perverted type. The drug does not altogether psychologically and physically change the individual. It seems to fit *his type of character*. It is not so much that one can see the opium *facies* and character and recognize them readily, but one can also recognize a singular type of man and woman whom one would unhesi-

tatingly classify as addicted to some habit or who is perverted mentally, morally, or physically. This class is seen among our anemic cigarette fiends, who have all the peculiar general aspects of the opium fiend.

There are great differences in the general actions and habits of the "fiend," whether he is addicted to morphine by the mouth, or is the user of the hypodermic or the devotée of the pipe. There is a vast chasm between the morphine fiend and the smoker which is difficult to bridge. He who induges in the "gun" is further away still. He neither cares to indulge in the simple pleasures of the pipe, nor does he contemplate the possibility of the satisfaction of content following a dose by the mouth.

There are many devious windings in the path before the fiend incarnate stage of the hypodermic is reached. There are thousands in New York City to-day who are satisfied with their daily smoke or a fraction of a grain of morphine as there are thousands upon thousands that are satisfied with their drink or two a day. The moderate opium addiction is not only a possibility, but it is a fact; a fact that is known to many, but the habit, or pleasure, is a more or less secret one on account of the opprobrium of the wise saws and moralists who write and control legislation on a subject they wot not of.

The opium habit is pernicious—it is bad and it is to be condemned in any country or in any man. This is all true, but it is in no way as pernicious, bad or unhealthy, from any standpoint, as alcohol. There are more drunkards made by the incessant demands upon the economy for more alcohol than there are "fiends" from the daily increasing psychical demands for the drug.

Pathological science teaches the practical fact that there is a far greater amount of actual modification of the body tissues, as a result of the use of alcohol than is possible to bring about by the use of opium or its derivatives. Alcohol changes the tissues directly; opium will not do so, except indirectly by its interference with tissue nutrition.

The opium habitué is only discovered by his admission or great excess. The alcoholic is vastly easier to discover. Mentally and physically the confirmed alcoholic is to be classified as a greater mental and physical departure from a given norm. To compare these again sociologically, the man who indulges in the public cup or the secret pill, one who really knows would unhesitatingly say that they are immeasurably far apart, and degradation sits with the followers of Bacchus and does not recline beneath the "shadow of the poppy."

To say that one cannot indulge in a modicum of opium daily for years and refrain from increasing his daily dose is to say what is untrue. Or to say that necessarily one neither obtains comfort nor pleasure therefrom and that misery and poverty sit at one's doorstep is also a fabrication.

The great trouble in the study of all types of habit neuroses or drug addictions is to obtain false impression from the extreme cases. To understand how impossible it is for the ordinary man to obtain important data upon a question of this kind is to realize the great difficulty in coming closely in touch with the secret devotée.

The intelligent man is not going to talk upon his habit. The ordinary individual will dilate upon the subject of alcohol; this is a subject which society permits to be discussed. How rare to find one who can talk intelligently on the subject of opium or understand it unless it is in a statistical, deprecatory manner as far away from any fact as the general tenor of Dr. Park's statements. To understand this subject it is not necessary to quote Kipling nor Dr. Parks, but to take up one's abiding-place among the people who use the drug. Then one soon will learn that there is a vast difference in the use and the abuse of this most useful of medicines to man, and it would not be long before one would be convinced that in no way nor from any standpoint is it as dangerous to the community as alcohol.

CHARLES H. BROWN, M.D.

25 West 45th Street, New York, March, 1901.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, March 2, 1901.

MR. BURDETT-COUTTS' STRICTURES ON THE SOUTH AFRICAN HOSPITAL COMMISSION—BAD AMBULANCES AND OUT-OF-DATE TENTS—FEEDING OF TYPHOID AND DYSENTERIC PATIENTS ON BULLY-BEEF AND BISCUITS—PREVALENCE OF TYPHOID FEVER IN THE TROOPS; 19,000 CASES, OVER 4,000 DEATHS AND NEARLY 11,000 MEN INVALIDED—PLAGUE IN INDIA INCREASING—THE EPIDEMIC OF ARSENICAL POISONING; 36 DEATHS IN MANCHESTER—ARSENIC SUPPLIED TO THE SUGAR MANUFACTURERS AT THE RATE OF 4 TONS IN 30 WEEKS—PLAGUE AT THE CAPE—THE HUNTERIAN ORATION—THE FORM OF THE HUMAN SKULL AND THE ORIGIN OF MAN—THE ANTI-TUBERCULOSIS MOVEMENT—GREAT DIMINUTION IN THE DEATH-RATE FROM CONSUMPTION.

IN Mr. Burdett-Coutts' second letter he passes from the defects of principle which he claims to have established in his first letter (described in my previous communication) to specific cases showing the grave defects of the Commission. So far no attempt has been made to answer his trenchant and grave indictment, although a few of the Conservative and, therefore, Government organs have in a

general way tried to depreciate his letters without answering his charges in any way. The Commission urges that duly qualified special sanitary officers should be forthcoming in future wars—a proposal which Sir Walter Foster, a medical member of Parliament, laid before the Government at the beginning of the war and which they, in their superior wisdom (!) rejected. Mr. Coutts asks, Would not the recommendations under this head have derived incalculable weight if the report had brought out a few of the grave results from their neglect? One case would have been sufficient, such as that of the 2nd Worcesters, who came fresh and healthy from Bermuda, marched over a clean trek into Bloemfontein with only two sick, were camped on ground just evacuated by a Paardeberg regiment, and within 3 weeks had 278 men down with typhoid fever from which 40 or 50 died. Then instead of sending out 8 or 10 consultants at a salary of £5,000 a year each, would it not have been better to have sent 20 or 30 experienced practitioners who could have taken charge of the larger hospitals? As to the ambulances the Commission fully supports Mr. Coutts' condemnation of the clumsy, inefficient vehicles in use. It also supports his criticism on the persistent use of the heavy marquee instead of the larger and far lighter tortoise tents used in all the private hospitals. But why are not the results of this mistake pointed out, *i.e.*, that the use of the marquee at places to which transport is the main difficulty restricts the tent accommodation for patients by nearly one-half? The Commission strongly supports his recommendation in favor of female nursing. It says, "Of course nurses could not be employed in field hospitals or at the front." But when a field hospital moves up to a large town on the rail and is stationary there for two months it could have nurses just as well as a general hospital. One of the greatest evils due to local mismanagement was the treatment of patients when being conveyed by train from the front to the base, a journey of three to five days, often performed in open trucks without extra clothing and in bitterly cold nights. The feeding of the patients who were mostly suffering from typhoid fever and dysentery on bully-beef and biscuits deserves the strongest censure. The Commission does not appear to have discovered how widely this practice prevailed. On the question of the high typhoid-fever mortality the Commission refuses to entertain a comparison between the private and military hospitals and then proceeds to accept such a comparison based on two military hospitals picked out by the principal officer of the Medical Corps. In the Volks private hospital at Bloemfontein the typhoid-fever mortality was 7.75 per cent.; in the military hospitals in the same town it was 21 per cent.

The serious mortality from typhoid fever in South Africa is shown by the following figures given by the Government in the House of Commons. In October there were 568 cases of typhoid fever and 98 deaths; in November, 1,213 cases and 207 deaths; in December, 1,665 cases and 286 deaths. The total number of cases from the beginning of the war up to December last was 19,101; total of number of deaths, 4,233. The number of men invalided with typhoid fever who have arrived in England is 10,975.

Plague in India is increasing. In the week ending January 17th in the whole of India there were 2,839 deaths compared with 2,463 in the previous week and 1,279 in the corresponding week of last year. There were 575 deaths in the Bombay Presidency, 1,863 in the Bengal Presidency, 37 in the Madras Presidency, 23 in Punjab, and 341 in the Mysore province. In Calcutta there were 78 new cases and 76 deaths. In Bombay city there were 293 deaths—a great increase. The total deaths were 1,119, equal to a rate of 68.97. Of this number 222 were due to plague—an increase of 68. A fifth outbreak is now developing and the disease is distributed over the city. Several dead bodies have been found in the public roads. The week ending January 24th shows a further increase of plague. In the whole of India there were 3,277 deaths.

The report of Dr. Buchanan, a medical inspector of the Local Government Board, to that body on the recent epidemic of arsenical poisoning has been issued. He has visited places known to be affected by the epidemic in Lancashire, Cheshire, Staffordshire, Worcestershire, Shropshire, Yorkshire, Nottinghamshire, Warwicksire, Northamptonshire and Leicestershire. He finds that there were in Manchester 2,000 sufferers from the epidemic, in Salford 782, in Chester 46, in Birkenhead 100, in Stowbridge 30, in Staffordshire 667. As to the mortality he says that without detailed knowledge it cannot be estimated. There were 36 fatal cases in Manchester between November 28, 1900, and January 10, 1901, 23 of the patients being women, and 13 men.

At the inquest on the body of a woman who is supposed to have died from arsenical poisoning in beer Dr. Campbell Brown, an analytical chemist associated with the Liverpool University College, stated that he had analyzed samples of sulphuric acid which had been supplied to Messrs. Bostock, manufacturers of brewers' sugar, and found that they contained on an average 2 per cent. of arsenic. The deliveries of sulphuric acid were at the rate of 7 to 8 tons a week. At this rate over four tons of arsenic would be supplied in thirty weeks, or 2,191,000 grains—enough to kill 1,000,000 people!

Mr. Edington, the Government bacteriologist, has discovered anthrax in the suspected cases of plague at Cape Town of which I have

informed you in my last letter. There are 12 undoubted cases of plague in hospitals and 4 doubtful ones. Two deaths have occurred, both victims being Kaffirs. There is only one white patient suffering from the disease in hospital. Twenty-four colored persons and 79 Kaffirs are in the "contact" camp. The authorities are redoubling their efforts to check the progress of the plague. The thousands of natives living in filthy hovels in the city are a source of great danger and the Government has decided to remove them to a location which is to be formed immediately on the Cape Flats.

The Hunterian oration at the Royal College of Surgeons, which was instituted to commemorate the work of John Hunter and his successors, was delivered by Mr. W. C. Macnamara, F.R.C.S., who took for his subject "The Form of the Human Skull and Its Relation to the Origin of Prehistoric Man in Western Europe." This subject there is reason to believe occupied the attention of John Hunter, the unrivalled collection of skulls in the museum of the College having been founded by him. From an analysis of the maximum number of anatomical characters common to man and anthropoid apes, it is proved that they are derived from the same stock. How has the difference arisen which exists between them as regards intellectual capacity? The body of an ape sometimes weighs more than that of man, but the brain is only half as heavy as that of an average European. The defect in the size of the ape's brain is most conspicuous in the anterior lobes. They have no speech center, consequently they cannot acquire speech. The defective anterior lobes of the ape are due to the small capacity of the skull caused by closure of the sutures, during the first year of life. An ape's brain, therefore, remains always an infantile brain; whereas in man the fore part of the skull does not consolidate until adult life and the speech center may continue to develop until the twentieth year. But this was not always true, for the human skull found in a tertiary formation in Java is clearly on the border line between man and apes and the skulls of the men living in Europe during the preglacial and interglacial periods resemble in form and structure more closely the crania of the chimpanzee than those of existing Europeans. In the post-glacial formations are skulls of the same type, but more highly developed. These post-glacial people were a short, powerful, long skulled race, the Africo-Europeans or Iberians who seem to have been the sole inhabitants of our continent at that period. Their stone, bone and horn instruments were superior to those of the glacial period. Their development is attributable to an alteration in the climate and fauna of Europe which compelled them in the struggle for existence to make greater use of their brains than their predecessors had. As their crania had innate power of growths their brains were able to respond to this call. As the neolithic period advanced the remains of a very different race are found in Western Europe. The men had large, well-formed skulls, possessed animals of an Asiatic stock, and used a language which still survives. They are believed to have been a branch of the Proto-Aryan race. Their remains are found in the Cro-Magnon and Mentone caves of France and in the long dolmens of England, Ireland, Europe, Asia, and North Africa. Then followed the bronze period when hordes of a short, small-boned, broad-skulled, Mongoloid race from the southeast of Asia passed into Europe bringing with them bronze instruments which gradually supplanted the stone and bone articles in use. They were the lake dwellers of Switzerland. In time they became absorbed into the pre-existing inhabitants and formed the ancient British stock. They were subdued by hordes of Teutons from Northern Europe and intermarried with a remnant of them, forming the Anglo-Saxon race. The existing European population is thus a mixed race. Nevertheless, from the measurement of the heads of 10,000,000 people it has been ascertained that in those countries which border the Mediterranean the people are still a short, dark, long-skulled race (Iberians). North Germany and Scandinavia contain a large proportion of the tall, fair, long-skulled Teutonic race (Aryan), and a vast triangle with its base in Eastern Russia and its apex in central France is inhabited by the descendants of the broad-skulled Mongoloid and Turanian races of central Europe. Environment acting for long periods on people of the same race has produced not only fixed hereditary physical character, but also specialized areas of nerve structure by means of which mental characteristics are transmitted as different as those of the Iberians of South America are from those of the Anglo-Saxons of the United States. Applying these principles to the vast and increasing populations of our towns Mr. Macnamara concluded that even in a few generations the people show indications of changes which will be more pronounced in their descendants. He is convinced that city children are deficient, as compared with country ones, in acuity of vision.

The anti-tuberculosis movement is still active. At Worcester a conference was convened by the County Council to hear addresses on the new method of treatment and to consider the best way of making it available for the poorer classes. The interest taken in the subject was shown by the large attendance, representing the County Council, the various local authorities, the medical profession, and some of the leading county families. Sir James Crichton Browne, who attended on behalf of the National Association for the Pre-

vention of Consumption, said that it was the work of Pasteur, followed by Lester, Koch and others, which made the present crusade possible. To stamp out tuberculosis might seem chimerical, but nevertheless that was the object of the National Association which was inaugurated two years ago. In 1838 out of every 10,000 persons in England and Wales 38 died of consumption, in 1899 only 13. The rate of diminution was a slightly increasing one and if maintained for another 30 years consumption will have entirely disappeared. The decline is traceable to subsoil drainage, sanitary reforms, increased cleanliness, and improved conditions of life generally. But the beneficent effects of these seem to be approaching a maximum, while overcrowding, one of the most prolific causes, seems likely to increase. The diminished death rate from all forms of tuberculosis means an annual saving of 75,000 lives. Promiscuous spitting should be prohibited for consumption might exist for a considerable time before it was detected. While pulmonary tuberculosis has been diminishing, intestinal tuberculosis, an affection chiefly of children, has been increasing. It is reasonable to connect this with tuberculosis milk. Private slaughter-houses should be abolished and municipal abbatoirs provided where all meat exposed for sale should be subject to inspection. Attention to cow-houses and dairies was of vital importance, infected animals should be separated from the rest of the herd and fattened for killing. Statistics of the open-air treatment are not available, but it seems clear that in the first stage of consumption 50 per cent. of radical cures and marked improvement in 25 per cent. can be obtained.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

SKIAGRAPHY VERSUS THE PRACTITIONER—OVARIAN CYSTS—MECHANISM AND MANAGEMENT OF THE THIRD STAGE OF LABOR—AGGLUTINATION PHENOMENA—EXTENSIVE INTESTINAL RESECTIONS—INSTANTANEOUS RADIOGRAPHY.

W. H. Brown, at the Leeds and West Riding Medico-Chirurgical Society, January 11, 1901, discussed the skiagram and its relation to the practitioner, especially in a medico-legal sense. The time has passed when the public was satisfied whether or not a limb was useful and strong after fracture. The appearance of the skiagraph in the field and especially within the reach of the laity has been a dangerous factor for the reputation of physicians and surgeons and often not deservedly so at all. Very likely many suits have been unjustly brought and in some cases even without warrant, because the local savants have turned the X-ray machine upon a limb otherwise perfectly sound and serviceable, but with the bone not mathematically or esthetically straight. The practitioner can protect himself always in one of two ways, best by both. He should treat no fracture without the aid of a consultant and he should always take a skiagram before and after reduction in order to prove what has been accomplished by the setting.

F. W. N. Haultain, at the Edinburgh Obstetrical Society, January 9, 1901, read a paper on the intraperitoneal rupture of ovarian cysts. In the majority of cases beyond question the rupture occurred without the knowledge of the patient, unless the tumor had been so large as to have attracted attention. The reasons for this are that the peritoneal cavity is purely potential and the contact of this viscera with each other hinders rapid escape of the cyst-contents; and also that in most cases the evacuations are sterile and harmless. In those cases which are recorded the majority show severe or even fatal symptoms. Palm in a series of 18 cases mentions 3 deaths due to collapse, 6 to acute peritonitis, 6 to chronic peritonitis and 3 to continued fever. Nepleen in 155 cases shows 65. The causes of death were chiefly profound irritation by the cyst-contents, sepsis and hemorrhage. The causes of the rupture of the cyst are variously stated, violence, morbid cyst-wall, intracystic hemorrhage, thrombosis, and twisted pedicle. Commonest of all is the softening of the cyst-wall when the cyst-contents are gelatinous. Such jelly-like contents are very slowly absorbed, hence may distend the abdomen if originally copious or if their production continue for any reason and, therefore, are the form of abdominal contents usually discovered after such rupture. On the other hand, many cysts are filled with practically only normal salt solution, which is absorbed so rapidly that it causes temporary polyuria. Such cysts, especially those in the broad ligament, may undergo total obliteration, or secondary single or multiple cysts may and often do arise as is shown by the presence of cicatrices in the walls of those found *in situ* at operations. Rupture, with spontaneous evacuation, or operative tapping, if done long before the laparotomy, often produces peritonitis, through the irritative quality of the fluid, so widespread as to render subsequent removal of the cyst-wall impossible. The treatment consists in such cases of the removal of the cyst as soon after evacuation as possible, thereby avoiding the risk of adhesions inherent in delay. At the laparotomy the mere incision of the peritoneum might be followed by such a gush of fluid as to simulate opening of the cyst itself. Stripping of the parietal peritoneum might then be done on the supposition that the cyst-wall is being enucleated. To avoid such an error the incision should always admit the hand for thorough exploration. The symptoms of rupture of a cyst are often so acute as to simulate any of the acute surgical abdominal conditions, especially when no cyst or other pelvic tumor has been previously discovered. In such cases the operation is *per se* exploratory.

B. Hart discussed uterine retraction with spe-

cial reference to the management of the third stage of labor and its mechanism. There are discrepancies between the theories of the mechanism of the third stage and the practice of its management. Retraction he defined as a distinct muscular action (a contraction) in which some of the thickening of the uterine muscle was maintained after the real contracting force had been expended. At autopsy postpartum normal uteri all seem to show the wall thinner at the placental site than elsewhere. Uteri removed during the Porro operation have uniformly thick walls, probably because of the stimulus of the longitudinal and transverse incisions. Uteri taken from the body after death, intact with the placenta *in situ*, always show a thinning of the muscle over its attachment, which is indeed thinner than anywhere else above the retraction ring. He next emphasized the importance of the elastic recoil of the womb produced no doubt by the large amount of elastic tissue in its walls. Such recoil occurs after each pain during the period of repose. The final point is that the placenta separates by a disproportion between this recoil as it occurs in the placental area and elsewhere. Hence, before such separation has really occurred the Credé method of expulsion is dangerous.

F. W. ANDREWS and H. A. SCHOELBERG, at the Pathological Society of London, February 5, 1901, gave a preliminary report of the results of their experiments as to the relative agglutination phenomena, seen after immunization against the bacillus typhosus and its allies. Andrews pointed out the importance of observing and recording the *quantitative* factor in all these cases. The degree of dilution at which a given serum will produce clumping has an important bearing on the diagnosis. Experimental immunization against the various members of the group of bacteria of which the bacillus typhosus is a member offer the best means of observations. The questions attacked were: (1) Does the poison exist as a soluble entity which may be filtered off from the medium in which the germs have grown, or as a constituent of the cell-protoplasm of the bacterium itself? (2) Is the reaction of agglutination evoked by a product common to all the members of the group or peculiar to each species alone? Klein and others have already shown that several species possess a common poisonous product and that each also produces its particular toxin. In their experiments, carried on chiefly by Schölberg, the aim was to reach as accurate an estimate as possible of the *quantitive* factor in these cases. The point determined was the limit of dilution at which a given serum will produce agglutination in a definite time (one hour) in emulsions of living organisms prepared from fresh gelatin cultures of them. The results of the experiments so far as they have been completed are as follows: (1) The product which is responsible for the agglutination resides in the cell-protoplasm, rather than in the soluble toxins themselves. (2) A share in the process is borne by a product in common to all the bacteria of a given group. For example, the serum of an animal immunized against the bacillus typhosus and producing active agglutination of it will to a lesser degree excite clumping of the bacillus coli communis and of the bacillus of Gärtner. (3) In addition there is an element present in each species by itself which excites a higher degree of agglutination upon that same species. (4) The rabbit is a more suitable animal than the guinea-pig for these experiments, because it produces serum of higher agglutinating power. Schölberg then described in fuller detail the methods adopted in the experiments and the precautions taken to avoid mistakes and fallacies. The toxins were obtained from the usual broth cultures after they were three months old, and proved to be sterile by cultivations made, repeated, and found consistently sterile. The bacterial injections were made from bacteria grown on dry agar entirely free from the water of expression. Suspension of a variable amount of agar culture was made in sterile normal saline solution and heated to 70° C. for sixteen minutes. Cultivations made from the bacteria injected were sterile. Broth cultures were not used in making the emulsions for agglutination tests, because they are not reliable. Gelatin cultures from forty-eight to one hundred and twenty hours old were used in the emulsions with sterile normal salt solution. Carefully plotted charts were prepared for comparison and exhibited. The first agglutination experiment was done on the fifth or sixth day after inoculation with Prof. Wright's sterilized broth cultures, bacillus coli and Gärtner's appearing one day later as the bacillus typhosus rose. The coli and Gärtner curves ran together, but independently of the typhoid. Inoculation of animals with pure typhoid toxin gave an average maximum dilution of 1 to 40 for typhoid; the coli and Gärtner were entirely negative at that index. On one occasion only when the typhoid index was 1 in 100 did the other two agglutinate and then after dilution of 1 in 10. Using the bacteria only in the rabbit, agglutination occurred on the fifth day for typhoid and on the sixth day for the Gärtner and the coli. A maximum dilution of 1 in 500 for the typhoid was represented by 1-50 for the other two on the ninth day. Using guinea-pigs the reaction was not so active and showed that when Gärtner's bacillus was inoculated the reaction for the typhoid and coli were negative, although for the Gärtner it was present at a dilution of 1 in 130.

T. MYLES, at the Royal Academy of Medicine in Ireland, December 7, 1900, presented a paper on the removal of large sections of the intestine in man and animals. One of his patients was brought before the meeting. The ten-year-old boy was run over by a truck carrying a ton and a half of grain over the mid-lumbar region while lying upon his stomach. This great traumatism produced no fracture of the vertebræ and very little external evidence of its presence. Seventeen hours after it a laparotomy revealed extensive damage to the intestine and a long trans-

verse rent in the mesentery. The length of intestine resected measured eight feet four and a half inches. The patient made an excellent recovery. His present condition is merely that of looseness of the bowels and an abnormally large appetite. The balance of his paper concerned the results of experiments on animals and an analysis of thirty-three cases in which over three feet had been removed in man. The conclusions are from these cases that when less than six feet six and a half inches are removed the intestinal symptoms are, as a rule, wanting, but present when more than this length is taken. Children seem to bear these extensive removals better than do adults, just as they often do other interferences.

E. W. SHENTON, at the Clinical Society of London, February 8, 1900, discussed instantaneous radiography, by which is meant the reduction of the exposure to reasonable limits, from one to thirty seconds. This can be accomplished by using larger and stronger tubes, which will not only shorten the time, but actually increase the penetration, revealing deeper parts of the body. Such are very valuable for detecting foreign bodies and especially for renal calculi. The writer has found a very simple method of locating the depth of foreign bodies with rapidity and accuracy. The tube is moved from side to side and the differences between the rates of movement of the visceral shadows and that of the foreign substance are noted. These depend upon the differences of distance from the tube. If now a probe is placed behind the screen at such a distance that its movements approximate those of the foreign substance, we have the first index of the position of the latter. Repeating the process from various directions, the exact location of it is determined rapidly and easily.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held February 7, 1901.

The President, Robert F. Weir, M.D., in the Chair.

(Concluded from page 363)

Results of Conservatism.—In Dr. Dudley's 182 cases, 129 resulted in the cure of all symptoms. In most of the cases multiple operations were necessary because the pathological conditions were complex. In sixty cases plastic work had to be done on both tubes and ovaries. In 120 cases the tapping and splitting of cysts was indicated. Out of 182 cases 27 have become pregnant and 22 children have been born at term. In one case, that of a woman forty-two years of age, who had been nine years married, one ovary and tube was removed and the other tube freed from adhesions. A six-pound-boy was born two years later. In this case the woman's condition was so poor that a general anesthetic was not given and the operation was done without anesthesia. In two cases a club-shaped tube was removed and the tube was carefully left open as far as possible. In both pregnancy resulted and living children were born.

Implantation of the Ovary.—Dr. Dudley transfers the ovary in certain cases from its original position to an incision in the fundus of the uterus. This he calls ovarian implantation in contra-distinction to transplantation of the ovary, which consists in removing it from one part of the broad ligament to the other. Dr. Dudley's method when the tubes are destroyed by a purulent degenerative process, or have to be removed because they contain intensely virulent infectious matter, consists in incising the uterus at the fundus and implanting the ovary. In six women in whom this has been done, menstruation has continued and the women have been very well satisfied with the results of the operation. Others have claimed to have done this operation before him, but Dr. Dudley considers that his right to priority in the matter is incontestable. During a recent visit to the continent he was assured by several prominent operators that they were using his method of implanting the ovaries with great satisfaction.

Gynecological Reaction.—Dr. Coe said that sixteen years ago it was not unusual to see tubes and ovaries showing no signs of disease presented at a meeting of a surgical society. Theoretically, conservative gynecology is eminently indicated. In practice, however, its results are not so favorable as to symptoms, anatomy, or pregnancy as some of its protagonists declare. It is very difficult to understand how conservative surgery can be properly done through the vagina. It is impossible to see anatomical details as satisfactorily as is necessary to do hopeful conservative work. The adnexa may be resected, but they cannot well be put back in place. It is not sufficient merely to drop them back into the pelvis, for they are then sure to occupy a displaced position, their blood-supply will be interfered with, and symptoms produced. There was a time when the appearance of a cyst in an ovary was considered good grounds for its removal. Ovaries were removed on suspicion. It is very much easier to do too much than too little. As a rule, patients are not so anxious for pregnancy as for the relief of symptoms. Unless symptoms exist that make life almost a burden, very few women are satisfied to have an abdominal operation done. The necessity for a secondary operation, or even its possibility, will usually lead the patient to decide against conservative gynecology if the case is properly presented. Even with the most favorable statistics only about a six per cent. of sterile patients are made fertile. This is certainly not an encouraging percentage for a serious operation with always the risk of some mortality.

Operative Indications.—Dr. H. J. Boldt said that there are two disease types of special interest: First, those in which there is absolute indication for radical surgery and, secondly, those in which the measure of conservatism is left to the operator. When cysts occur in the ovary, for instance,

they usually occur on both sides. Here there seems a special indication for conservatism. The operation is usually done for symptoms, however, and the puncture of cysts will often not relieve the symptoms. There may be some measure of relief for a time after the operation and then a recurrence of symptoms. It is even questionable whether such cysts have as much to do with the production of symptoms as is often thought. Simple puncture does not destroy them. The cautery seems indicated and yet undoubtedly produces more injury than is necessary. According to the view at present accepted conception takes place in the tube. If the tube is resected, where will conception take place and is there any hope for pregnancy after resection of the tube?

Failure of Conservatism.—Dr. Egbert H. Grandin said that in all the cases of conservative gynecology which he has been able to follow up either a secondary operation had to be done or there was failure to relieve symptoms. This, of course, does not refer to cysts alone, but to gross lesions. The conditions described by the special adherents of conservatism are ideal. Resections of the tube, for instance, cannot be done in the theoretic way described. The conditions being dealt with are eminently infectious. In private practice patients on whom conservative work is done without success fail to return, and so are counted as successful. Other practitioners know better. Where small portions of ovarian tissue are left, the menstruation that occurs is not regular, but very irregular, apt to be painful and too plentiful. The risk of a secondary operation is not justified by the results so far obtained by conservative gynecology.

True Conservatism.—Dr. Philander A. Harris, of Paterson, N. J., said that the operator who tries to preserve enough ovarian tissue to secure pregnancy does not always relieve symptoms as well as he who does a radical operation at once. The woman must be consulted and the case put plainly before her. Amputation and exsection of the tube and resection of the ovary can be done. Conservatism often gives excellent results. Dr. Harris presented a series of photographs from specimens showing what had been accomplished in his practice and demonstrating the success of conservative surgery.

Maternity or Divorce.—Dr. H. N. Vineberg said that conservative surgery in gynecological cases has, in his hands, given some excellent results. In his dispensary practice he comes in contact with a series of sad cases, in which the women come for treatment, not for symptoms, but because they are sterile. If they cannot become pregnant their husbands will get a divorce from them. It is in these cases that the surgeon's skill must be exercised to save every possible bit of tissue and give the woman some chance, however remote, of becoming a mother. Some of the bad results that are complained of are really due to the fact that there are, in addition to disease of the adnexa, pathological conditions of the uterus. These should be treated, either at the same time as the adnexal disease, or later. Before there is any question of absolute failure, all uterine conditions must be relieved and modified as far as possible.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Stated Meeting, Held November 14, 1900.

The President, W. L. Baner, M.D., in the Chair.

Rhinoscleroma, With Presentation of Patient.—Dr. H. Jarecky read a paper on this subject with report of the case presented. (See MEDICAL NEWS, p. 420.)

Discussion.—Dr. Beaman Douglass said the case was particularly interesting from various standpoints. The sessile tumor which appeared first in the case was probably not present when the patient went to the different dispensaries. If the patient had that growth, it would have been amputated. In this case the diagnosis rested between tuberculosis, syphilis, new formation, lupus and rhinoscleroma. The day has passed for thinking only those cases rhinoscleroma in which there was a change in the external nose. Probably this was such a case in the start, because it was difficult to explain the absolute shutting off of the pharynx from the nasal cavity without the involvement of the posterior tips of the turbinated bones. This disease certainly was not produced by a malignant growth; new growths were generally unilateral, and this was very extensive and bilateral. As to its being a case of atrophic tuberculosis, it was certainly an atrophic process, but the characteristic active inflammatory condition and induration which tuberculosis always shows had been absent in this case, together with the absence of lung involvement, and the impossibility of any case of tuberculosis with such an extensive involvement of the throat living to tell the tale; therefore, tuberculosis was excluded. Syphilis was likewise excluded, not only from the history of six perfectly healthy children, and the absence of any miscarriage, the absence of skin infection, absence of lymph involvement, but also because there was no destruction of the deeper tissues. A case of syphilis which would have produced so extensive an atrophy or so extensive cicatrization, would also be accompanied by a destruction of the arytenoid cartilages, the thyroid cartilages and the nose, and possibly of the deeper structures of the septum. Lupus was also entirely excluded, not only from the absence of ulceration, but also from the absence of the characteristic cicatrization.

As to the nature of the tissue which had been formed in this case, it was a peculiar lesion. It was something which American pathologists have not had much opportunity to examine, but was described fully by foreign observers, who see a number of these cases in

Russia and the Eastern part of Austria, as a granulation growth. It is produced undoubtedly by a coccus or bacillus identical with the pneumonia bacillus. It is a slow chronic granulation formation. In the subepithelial parts the bacillus develops slowly, and as it does so, instead of breaking down the tissue by the formation of new cells, as syphilis does, or as the bacillus of lupus does, it formed an infiltration of large polypoid cells in the connective tissue, resembling the early cells of tuberculosis. These cells undergo a degeneration and are known as Mickulicz cells. The bacillus remains for a long time in the tissue. It begins in the nose, and gradually extends throughout the respiratory tract, invading finally the pharynx, and, sometimes even the smaller bronchi. The speaker had seen cases in Vienna where Prof. Schrötter by his ingenious instrument, the bronchoscope, was able to demonstrate the rhinoscleroma nodule in the bronchus on the right side of the lung, and the clinical exhibition of the obstruction of the lung was verified by examination.

The prognosis of the disease is perhaps not as hopeless as held by foreign observers. One point of great interest in this case was that it seemed to be getting well in this climate, under more favorable conditions of hygiene.

Treatment.—On the other side, the tendency had been to operate and the results from the operation have not been good. Prof. Chiara had abandoned all operations except curettage. He tried splitting the larynx so as to reach the growth from the external wound, but has been disappointed. The disease is apt to reappear. Medicinal applications were of no use, the more favorable treatment being to keep the parts clean, put the patient in a healthy hygienic condition, attend to baths, give the patient a highly nutritive diet.

In the pathological cure the patients get well by a cessation of germ activity, and the bodies of which it was composed gradually disappearing. The hyaline bodies last for a long time, but they sink into the deepest structures of the tissue, leaving the surface, and lie at last near the muscular layer. They disappear and after years connective tissue takes the place of the growth, causing a cure of the disease by cessation of the rhinoscleromatous process.

Dr. Francis J. Quinlan said that conditions similar to the one under discussion were often seen, where in early childhood there were marked destructive lesions, following diphtheritic ulcerations. Scar-tissue was peculiarly susceptible in some to different forms of inflammation, although the present patient presented no evidence of this. He thought syphilis and laryngoscleroma were the only points at issue. There were evidences of subacute inflammatory points that closely resembled syphilitic ulceration, without having any marked destruction of tissue, still, syphilis gave just such conditions in the throat and why not in the oropharynx. Very frequently these forms of latent syphilis will not readily respond to antispecific measures. There may be conditions going on in the deeper structures, especially those of the larynx, where extensive and severe lesions are apt to advance on without responding to remedial agents.

Dr. Wolff Freudenthal said that there is no doubt that hygienic as well as climatic and telluric conditions have an influence on the duration of the disease; but naturally there must be other factors about which little is known. He agreed with the previous speaker that there could only be a question regarding diagnosis between syphilis and the diseases comprised under the name of scleroma. It certainly is not a case of tuberculosis. Dr. Jarecky alluded to a paper written by Dr. Freudenthal seven or eight years ago, on so-called Stoerck's blennorrhea. At that time Dr. Freudenthal said that Stoerck's blennorrhea, laryngitis sicca and rhinoscleroma should be grouped together. He has shown two cases of laryngitis sicca, which had developed into typical cases of Stoerck's blennorrhea. The glottis was wide open in the beginning, and came down to a small half-moon-shaped gap, and all the other symptoms of Stoerck's blennorrhea were present. The speaker hardly thought "the case was practically cured." The disease commenced in the pharynx and trachea and the patient will, surely at some future time, have more trouble from the disease. One may be forced to perform tracheotomy, as has been done in many other cases. Dr. Freudenthal showed a picture of the case he reported six years ago. The patient is no longer his friend, because he would not testify in Court that said patient's physical troubles came from a railroad accident. This man wore a tracheotomy tube for about ten years, and his condition had not changed much for the worse, although he lived in the filthiest and dirtiest neighborhood. In regard to the statement made by a previous speaker, that perhaps more cases get cured here on account of cleanliness, etc., the speaker could not understand in what respect cleanliness can cure scleroma of the trachea or of the larynx, although he admitted that the disease originated in a dirty nighborhood.

Dr. George T. Jackson said that, as a dermatologist, he was interested in the disease as it began on the skin and anterior part of the nose. He asked Dr. Douglass how many of the fifty cases of which he spoke appeared on the skin of the nose. He had seen three cases of rhinoscleroma affecting the nose and nasal septum. One case he saw within a year. It was Dr. Freudenthal's case. He turned up in the Dermatological Society, under somebody else's guidance. Another case was a case of his own, of which he showed a picture.

He had seen another case, which had developed in this country, a boy, who lived in the neighborhood of Buffalo, and never had been outside of the country. Dr. Wende of Buffalo, brought him to the New York Dermatological Society for confirmation of his diagnosis. This case went on more rapidly than most cases and the boy died. He responded to all the tests in the way of bacteriology, etc.

Diagnosis by Microscopical Examination.—Dr. Douglass said he did not remember exactly, except that he saw very large noses on many of these rhinoscleróma cases. It was not common to have the external part involved, as well as the internal. The time was past when diagnosis was made only when the external nose was involved. The diagnosis was made from the appearance of the lesion. In Vienna, if the case comes from Russia, they take out a piece of the tissue and find the characteristic condition, the presence of the pneumobacillus and the hyaline degenerated bodies. When these came from the nose and throat, it was called rhinoscleroma. However, it was quite frequent to find in these Vienna cases, and some in Hamburg and Berlin as well, that they were frequently associated with advanced destruction of the skin and enlargement of the nose. The diagnosis could not be made from syphilis except under the microscope. Most of them were in a much worse condition than the case just presented, because the pharynx and larynx were covered with nasal pus.

Dr. Jarecky, in closing, said if this condition was caused by diphtheria, there would be adhesions, but no cicatricial bands. The bands extend posteriorly from the pillars across to the lateral walls of the pharynx. He particularly inquired of the patient as to whether she had suffered from diphtheria. As regards syphilis, he put this patient on anti-syphilitic treatment and it only made her worse. There were absolutely no lymph-glands enlarged. Baurowitz, in one hundred cases of scleroma, mentioned particularly the loss of the uvula as a distinct diagnostic point; and although it would be lost in syphilis, there would be a loss of substance, but there would not be a smooth, cicatricial scar, as this patient showed. As regards Dr. Freudenthal's statement, that the process began in the trachea, he hardly though that was true in this case. The patient had complained of dyspnea and troublesome breathing for the last ten months, whereas she had sought treatment four years ago, for a trouble in her throat, and had a mouth-wash prescribed. It must have begun in the throat and was still active in the lower parts. As regards tracheotomy, he thought that would not be necessary, as she had received relief from the intubation tubes. No. 1 had been passed two or three times; and as they dilated and ran up the scale, she would obtain more relief. With regard to Dr. Jackson's question, as to in how many cases the external nose was affected in the Vienna clinic, as reported in an article published in the June number (1900) of the *Archives of Rhinology and Laryngology*, the author, in speaking of one hundred cases, mentioned one in which the nose alone was affected.

Vertigo.—Dr. Martin A. H. Thelberg read this paper. (This will appear in a future issue of the MEDICAL NEWS.)

Discussion.—Dr. Max Einhorn said that the speaker did wisely in limiting his remarks to those cases of vertigo which emanate from some disorders of the digestive tract, because, otherwise, the subject would be too lengthy for the evening. There was no doubt that there existed a vertigo that was to be ascribed to disorders of the digestive tract, not only to hypersecretion, hyperacidity, but also to disturbances with decreased secretion, or *with* an entire absence of secretion in the stomach.

Not Auto-intoxication.—A great majority of physicians have been inclined to assume some kind of auto-intoxication from the stomach and intestines. Some time ago, in another Society, in a discussion on auto-intoxication as producing the nervous symptoms in constipation, the speaker did not favor this view. The reason for this was that he often saw cases in which there was too much acidity, and vertigo was caused by that acidity, disappearing in five minutes by giving an alkali. This could not be done if the vertigo had been caused by some process of auto-intoxication.

Treatment.—With regard to the treatment of the stomach and digestive tract, these cases will have to be handled individually. There are so many things that may cause vertigo that each should not be treated in the same way. Some patients had intestinal catarrh, which was often the cause. They should be thoroughly examined and the abnormal condition found and treated. Thus in habitual constipation, regular movement of the bowels should be accomplished. If there is catarrh in the intestines, this should be treated. We must always first know the exact condition, before trying to remedy the disease. Often in these cases there were distinct gastric symptoms; nausea, some vomiting, and sometimes the stomach was not to blame for these troubles. One could not be guided by symptoms alone, and should examine all the organs as far as possible. The eyes and ears should be examined. There are always a certain proportion of cases that could not be remedied. He spoke of one patient, who was troubled for a year and a half. His vertigo was connected with fright and it was so pronounced that he was afraid to go to church, or to go to any social entertainment. He would get palpitation, could not do anything, and it disturbed him a great deal. The speaker found some hyperacidity of the stomach and corrected that. He felt his gastric symptoms

were better, but the original trouble was not entirely remedied, after a treatment of four or five months. In the majority of cases of vertigo the treatment is successful. Every day he saw patients who complained of dizziness and vertigo, caused by the stomach or a disorder of the digestive tract, and they quickly recovered. He thought the subject was of great importance, and the Society should be thankful to Dr. Thelberg for bringing it to their attention.

Vertigo a Symptom.—Dr. E. D. Fisher thought that vertigo should be regarded as a symptom. It was only a symptom of a disease in the class of cases which the writer of the paper had given, and was the result of the various disturbances of the intestinal tract and the stomach. Wherever vertigo was a constant symptom, something that was with the patient at all times, one must look for something different than stomach and intestinal troubles. For the direct cause of that dizziness or vertigo, the brain should be thought of as the seat of the disturbance. It might be a dilated stomach, a condition of toxemia or some other cause which affected the action of the heart, and naturally affected the circulation of the brain. When a local condition, such as an intestinal disturbance, was relieved the vertigo was helped. There is a large class of vertigos which are not at all due to intestinal or stomach trouble, although they might be largely influenced by such. There are patients who have diseased arteries, in whom disturbances of the intestinal tract can produce vertigo.

Dr. L. Marcus did not agree with the writer of the paper that the general practitioner failed to recognize these symptoms. In looking over the literature, he found that most of the works on the stomach, intestines or general medicine acknowledge its existence, but it appeared to him that it was the neurologist who disputed its existence, and it is on this account that he feels certain that the general practitioner recognizes, and treats it successfully, so that few cases come into the hands of the neurologists, thereby causing the general doubt among them of its existence.

Dr. R. C. Newton said there were a number of causes of vertigo that had not been mentioned. It would take too long to go into them all. In general practice one frequently meets with vertigo, more or less pronounced, which may be due to malaria, overeating, nicotine poisoning, working too long in the impure air of class-rooms, and want of muscular exercise; although undoubtedly the vast majority of cases of true vertigo are due to one, often two principal causes mentioned here this evening, namely, either gastro-intestinal disturbance or arterior fibrosis.

Dr. George McAuliffe said that, apart from the local causes of vertigo, such as cerebral causes, a constant factor in all vertiginous attacks was the change in circulation, whether that be induced by stomach or intestinal disorder, or by any other organic trouble. It was a curious fact, however, that the semicircular canals, despite the arguments brought to bear that the organ of equilibrium does not reside there, were directly responsible for attacks of vertigo. He spoke of a case of his, where a slight pressure of the probe produced vertigo, a clear demonstration of the intimate connection of the semicircular canals with the equilibrium. He referred to a case of sclerosis of the middle ear, in which the patient was troubled with attacks of vertigo, which came on at times when they were least expected. He would be walking along the street, and immediately would reel to one side and be compelled to grasp some post to prevent him from falling. The attacks lasted for a few minutes. He found by observation that a good dose of bicarbonate of soda would clear the condition in five minutes. It improved his hearing; as he expressed it, opened his head, independent of any condition of the stomach at the time. There were many cases of heterophoria that caused vertigo. One patient of his at present could not go down the stairway in the theatre or house without getting vertigo. She had to close her eyes and feel her way, one stair at a time. He thought one of the chief causes of vertigo, and the only constant factor in the cases of vertigo outside of the direct cerebral effects, was the circulatory change which was established reflexly.

Dr. Joseph F. Terriberry said that his experience was somewhat at variance with that expressed by Dr. Fisher, namely, that persistent vertigo indicated cerebral trouble of an organic nature, due to arteriosclerosis, and is, generally speaking, in accord with that of the author of the paper. In this connection, he mentioned a case now under his observation. A man past middle life, generally healthy, of good ancestry, with normal muscular system, has for from twelve to fifteen years been greatly troubled by poor gastro-intestinal work, the result apparently of faulty hygienic and dilatory habits. During this while, he has suffered from constipation, absence of appetite, lack of energy, very restless nights due to disquieting dreams, and twitching of his muscles, so violent at times, as to awake him from sound sleep, and more or less frontal headache and dizziness at longer or shorter intervals, during this time. Eight months ago he had an epileptic fit at five o'clock in the morning, and these attacks have recurred at intervals of from three to six weeks since then, and always at the same time. A careful examination failed to discover any organic disease. Correction of his gastro-intestinal condition by hygienic, dietetic and medicinal measures, has resulted in a cessation of the epileptic seizures, disappearance of the vertigo and other head symptoms,

restored appetite and regular bowels. Here, then, is a man who has been troubled with vertigo for from twelve to fifteen years, and who presents no evidence of organic disease.

Dr. Jarecky said he wished to call attention to one peculiar case of vertigo. Dr. Koles had been treating this case for a time and referred it to the speaker, thinking it might be caused by the eyes. He found over the cornea a little ulcer, gave a wash, and, on healing, the vertigo disappeared. The patient had vertigo for ten days while Dr. Koles treated her, and continued for another ten days till the ulcer healed.

Dr. Thelberg, in closing, said that the point which he wished to emphasize was that with the general practitioner gastro-intestinal vertigo was the most common. He had had a case of recurrent vertigo, which really was the cause of studying up the subject. On looking through all the authorities, he found that everybody differed. This patient had been treated for heart-disease by different practitioners for a long time, but she had no heart-lesions. She could not leave her home alone, because, if she crossed the street she had to rush with outstretched arms and catch hold of something. She could not go in the street-cars. The speaker treated the digestive disorder and cured her. He did not deny that disease of the semicircular canals, as well as other etiological factors, may cause vertigo, but the affection in the majority of the cases was due to gastro-intestinal disorders.

BOOK REVIEWS.

STUDIES OF AMERICAN FUNGI; MUSHROOMS, EDIBLE, POISONOUS, etc. By GEORGE FRANCIS ATKINSON, Professor of Botany in Cornell University. Andrus and Church, Ithaca, N. Y. ($3.00 postpaid).

THIS book on American mushrooms is a work of high economic value, and is beautifully and profusely illustrated with photographs of the fungi taken in their natural states. While it is a thoroughly scientific study of the higher group of fungi, it is written from a broader standpoint than that of a mere systematic study. It indicates the edible fungi clearly, and points out the poisonous ones that resemble them.

Americans do not avail themselves of the bountiful supply of table-mushrooms that grow in the woods and fields as eagerly as do dwellers in European countries. There even the poor know a large variety of the fungi that make an excellent substitute for meat, but it is hoped that the impetus given to mushroom-collectors by the work of the late William Hamilton Gibson will be continued by this more complete book.

Mushroom-hunting has grown to be a fad among physicians during the last few years, especially in Boston, Philadelphia and New York, where every busy man needs an incentive to get beyond the city-limits; and in a number of laboratories and dens the chafing-dish has its place along with more prosaic apparatus. The contribution by Mrs. Rorer of a chapter of receipts for cooking mushrooms will add a very practical value to the book.

Dr. Atkinson's book, however, is not only for the man who collects mushrooms for amusement. It is an authority on the subject of the toxicology and chemistry of mushrooms; and by means of its photographs and descriptions of the deadly species, the physician can at once verify any poisonous species that has been eaten by mistake.

It supplies the most concise and complete recent resumé of the subject of mushroom-poisoning that has yet been published, and for that alone should be on the shelf of every physician, especially in these days when the sudden interest in mushrooms is leading enthusiasts to try everything they find.

AN AMERICAN TEXT-BOOK OF PHYSIOLOGY. Edited by Dr. WILLIAM H. HOWELL. Second Edition. Revised. In Two Volumes. W. B. Saunders & Company, Philadelphia and London.

WE have had occasion to praise this excellent work and in its new edition and new dress it deserves even higher commendation. The plan of issuing two volumes instead of one is specially valuable, as the old single volume was one that required athletic arms to handle. In its present form it is handy and comfortable as a text-book and reference work.

The present edition shows some slight changes in the subject-matter; all of which commend themselves as being more in accord with later-day physiology. The chapter on the central nervous system has been altered more than any other and, it should be said, greatly to the advantage of the work. The previous mode of presentation left much to be answered and was quite inadequate for the purposes of the student. The present chapter, however, is certainly most commendable and, when read in conjunction with the chapters on the special senses, affords a most comprehensive view of the present knowledge of the functions of nerve-structures. Taken all in all, this work reflects the high quality of American physiological activity and is deserving of a generous appreciation.

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE COLLEGE OF PHYSICIANS AND SURGEONS. COLUMBIA UNIVERSITY, NEW YORK. Vol. VII. For the Collegiate Year, 1899-1900.

THE present volume, made up of reprints of articles appearing in current medical literature, is highly suggestive of the excellent quality of the work done in this well-equipped laboratory. In all there are some fourteen studies covering a wide range of pathological inquiry.